

THE HOMEOWNER'S BUSHFIRE SURVIVAL MANUAL



Department of Planning
and Urban Development
Western Australia



Bush Fires Board
of Western Australia

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While every care has been taken to ensure that the information contained in this book is the best available from the relevant authorities, it is meant as a guide only and the authors cannot be held legally responsible for the accuracy of the contents.

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INTRODUCTION:

This manual has been prepared to help you be better informed about bushfires.

It draws together the best advice available on preventing fires and fighting them. Many of the lessons have been learnt at the tragic cost of loss to possessions and life itself.

It is hoped that you will thoughtfully consider how best to apply this information to your own property, and then use the preventive measures recommended. In so doing fire damage and the associated human trauma **WILL** be reduced and our country will be a safer place to live during our hot fire prone summers.

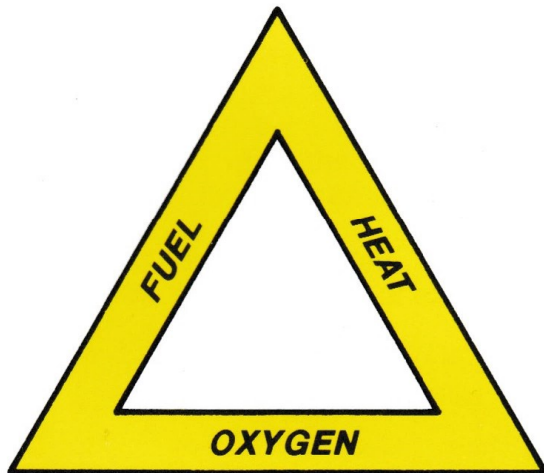
BUSHFIRES

3 Ways to fight back

When a fire is raging out of control, it's hard to believe anyone knows what it will do next, or that anything will stop it. And yet...the 'rules' about how fires move and spread are well known, and all fires have three 'weaknesses' - they need fuel, oxygen and heat. If there's nothing to burn, or no air, the fire will go out; and if the fuel is not heated up enough, it won't burn.

Most of the fire safety measures in this book are based on reducing fuel, oxygen and heat in and around the house.

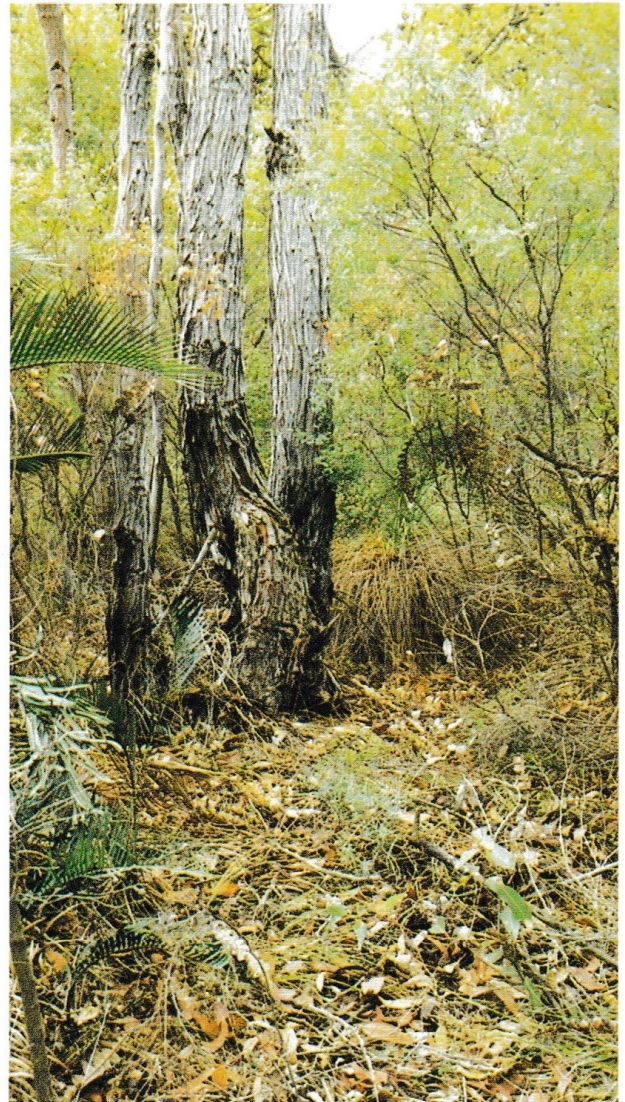
THIS COMBINATION OF FUEL HEAT AND OXYGEN CAN BE ILLUSTRATED AS A FIRE TRIANGLE -



ALL FIRE-FIGHTING METHODS AIM AT BREAKING THIS TRIANGLE IN ONE WAY OR ANOTHER

Fuel

In summer, Australia is covered with fire fuels - long dry grass, dead leaves and twigs, parched native shrubs - which burn like a torch. Without them, there would be no bushfires. So fire prevention measures are largely based on getting rid of these fuels - by cool burning forests before the fire season, mowing or burning-off long grass and cutting firebreaks. When a bushfire is raging, fire-fighters often bulldoze firebreaks around it or burn back towards it, to remove the fuel the fire needs. It's essential to remove fuel from around the house in order to reduce fire intensity.



Heat

Bushfires generate unbelievable heat. Much of this goes up in the air, but high levels also radiate out at ground level. This 'radiant' heat spreads the fire by drying out vegetation so it will burn. Radiant heat can kill: that's why, during a fire, you need to cover all bare skin with long sleeves, long trousers, gloves - anything. Keep a blanket in the car, and get under it if you're trapped in a fire.

Although radiant heat is so fierce, it is easily deflected by any solid barrier - a hedge, a wall, a building. If you're caught in a bushfire, the safest place is inside a building, away from the radiant heat. Windbreaks and other barriers stop the heat in front of a fire drying out unburnt vegetation, and this helps check the blaze.

Heat from a fire also travels by way of sparks, which may start new fires. Around the house, spots where sparks may lodge or enter must be closed off.



Oxygen

When a frying pan catches fire, it will go out if you put the lid on the pan. In the same way, a bushfire needs oxygen to keep going; and the more there is, the faster the fire burns. Strong winds not only force the fire along, but increased the air circulation and so provide more oxygen. So any measure which reduces wind speed will reduce the intensity of the fire. Trees can effectively shelter your house from winds.



Fires usually move faster in grassland than in forests because winds are stronger and the fuels are less dense.

Around your house, you can protect things from fire by enclosing them to limit air circulation. For instance, aluminium building foil laid above and below the rafters will help stop the rafters burning.

THE RIGHT CLOTHES

Can save your life...

Wear

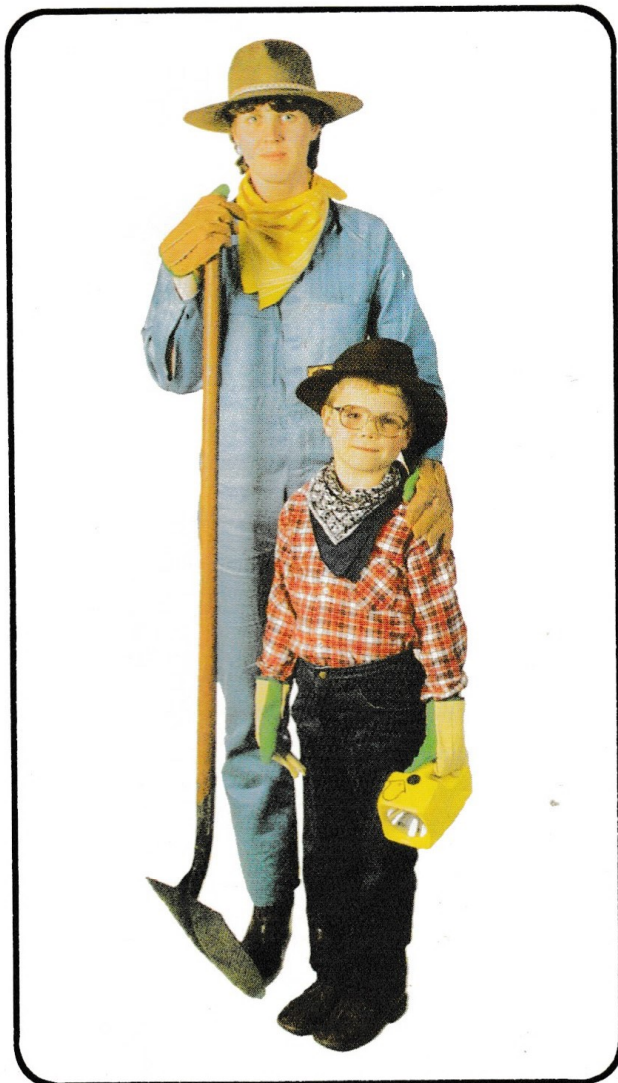
Long-sleeved shirts
Long trousers, jeans or overalls, sturdy shoes, wool or cotton socks

Do not wear

Singlets
T-shirts
Short-sleeved shirts
Shorts
Dresses or skirts
Sandals or thongs
Stockings or synthetic socks

Clothes should be made of

Pure wool
Heavy cotton drill or denim
NOT synthetics



Outside the house, or fighting the fire, add

Wide brimmed or hard hat

Goggles or glasses

Gloves

A moistened mask to filter smoke and protect your face - keep wetting it with water

Remember

Cover up as much skin as you can. BUT do not overload yourself with tight-fitting or heavy clothing, as the heat will be intense. Two layers of loose-fitting clothes work well.

PROTECT YOURSELF FROM RADIANT HEAT WITH LONG SLEEVES, LONG TROUSERS AND STRONG SHOES



HOW RISKY IS YOUR LAND?

Here's a way to estimate the fire risk in your district. For each of the following 8 points, tick which level of risk applies to you - high, medium or low. The more 'high risk' points you have, the more fire protection measures you're likely to need.

	LOW RISK	MEDIUM RISK	HIGH RISK
1. Fire season - how long? High-risk areas have a long fire season - 5 or more months each year. Low-risk areas have a shorter fire season - say, only a couple of months.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Slope - how steep? If you live on or near very steep slopes, its a 'high risk' area. The steeper the slope, the faster a fire will burn up it. A 'low risk' area will have gentle slopes or be quite flat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Vegetation - how much? Fires need fuel to burn. If you've got lots of long grass, forest floor litter and flammable scrub nearby, you're in a 'high risk' area. A low risk area would have little or none of this.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Vegetation - how dry? The drier the vegetation, the greater the fire hazard. Northern slopes are drier than southern slopes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Bushfires - how often? Some places have a history of bushfires. The more often fires have occurred in the past, the higher the risk.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Houses - how many? The more houses in rural areas, the higher the fire risk tends to be. 'Low-risk' is one house for every 50 hectares or more; 'high-risk' is one house per 10 hectares or less.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Roads - how good? Low-risk districts have many good roads providing easy movement through the area. High-risk areas have a single long dead-end road, or roads that are easily blocked by falling trees.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Fire Services - how good? 'Low risk' areas have good fire-fighting services, a fire brigade within 20 minutes call, several back-up fire brigades, plenty of water supplies and can move cross-country easily.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAFER LIVING

In fire-prone areas

What have we learnt from Ash Wednesday?

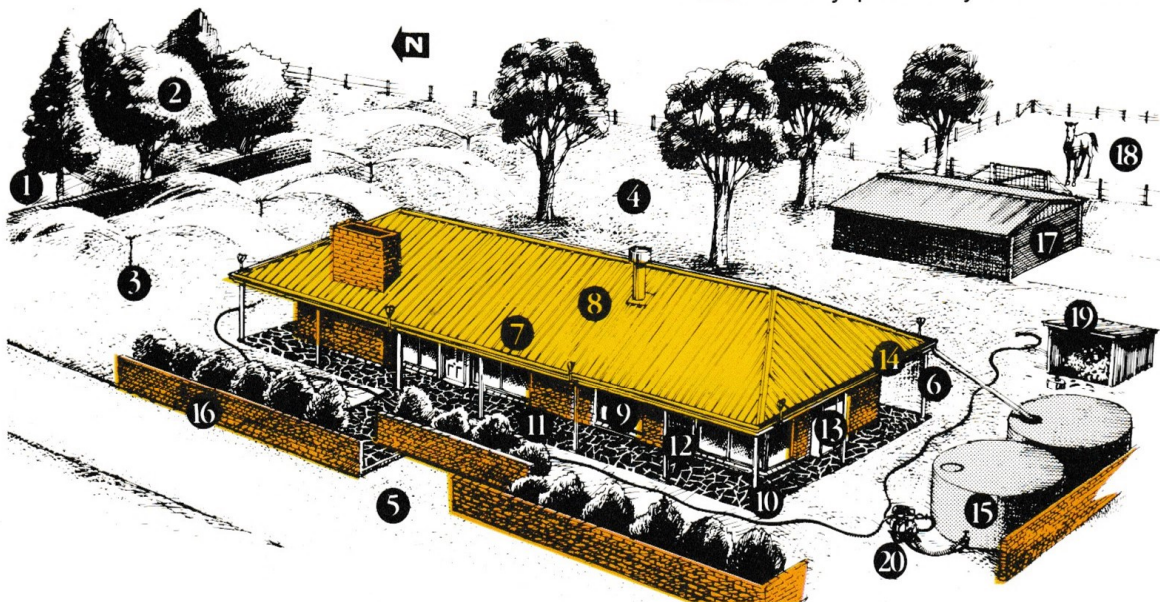
WE KNOW THAT some houses are just unsafe - built in the wrong way, in the wrong place. In the nightmare fire, where flames might dwarf houses and temperatures be hotter than the hottest furnace, these houses will burn, and people and animals

with them. And it may not even take such a big fire to do it - some of them may burn this summer.

WE KNOW THAT too many people do not take the most simple precautions to protect their homes. Grass is left long, twigs and dead leaves allowed to build up around the house.

AND WE KNOW THAT, with intelligent thought and reasonable effort, houses in fire-prone areas CAN BE MADE SAFE - can survive the nightmare fire.

1. Fires are spread and fuelled by flammable material on the ground. Clear away all dried grass, dead leaves and branches, brush, etc under trees near your house.
2. Establish broad leaf deciduous trees around your house to act as a spark shield.
3. Set up sprinklers to keep the ground, roof and walls damp. A portable diesel or petrol pump drawing water from your tanks or dam is ideal. It will make you independent of pressure loss in mains water or power failure.
4. Maintain a well cut green lawn around the house, with well spaced trees, to act as a break.
5. A wide gravel or paved drive will provide additional protection.
6. Keep wooden trellises and other timber addition to a minimum and use metal support posts around the house.
7. Ensure the roof and roof capping is well sealed to prevent entry of sparks. Also check for gaps near the chimney and guttering where embers may accumulate.
8. A roof of low profile is the safest. Securely fix metal roofing to withstand high velocity 'fire storm' winds.
9. Protect vents and windows externally with fine wire mesh to prevent spark entry.
10. Increase your safety by paving around buildings with masonry, slate or concrete.
11. Avoid the real danger of wind blown debris and embers starting fires under your house by covering in all underfloor areas.
12. Check walls for cracks and gaps. A well 'sealed' wall increases your protection against wind blown sparks.
13. Keep all your firefighting equipment in one convenient location - and easily accessible.
14. Clean out your gutters. Consider installing mesh or gutter guard.
15. Connect large diameter 'gate valve' fittings to the outlet of your tanks to provide ample water supply to your fire fighting pump.
16. Masonry garden walls help stop embers blowing onto house walls and deflect grass fires.
17. Store flammable fuels well away from the house.
18. Ensure farm animals are in a well cleared, preferably bare, paddock or large yard.
19. Store firewood well away from the house.
20. Ensure that all pumps and hoses are working well by testing your fire equipment regularly. Your hoses should reach every part of your house.



KEYS TO SURVIVAL

Starve the fire

There's no fire if there's nothing to burn. So reduce fuel levels around your house by;

- Cutting long grass, bracken and dense scrub,
- raking up leaf litter and twigs under trees, and removing trailing bark,
- pruning lower branches (up to 2 metres off the ground) to stop a ground fire spreading up into the trees,
- on larger properties, ploughing a firebreak along your boundary.



HEAVY SCRUB FUELS THE FIRE

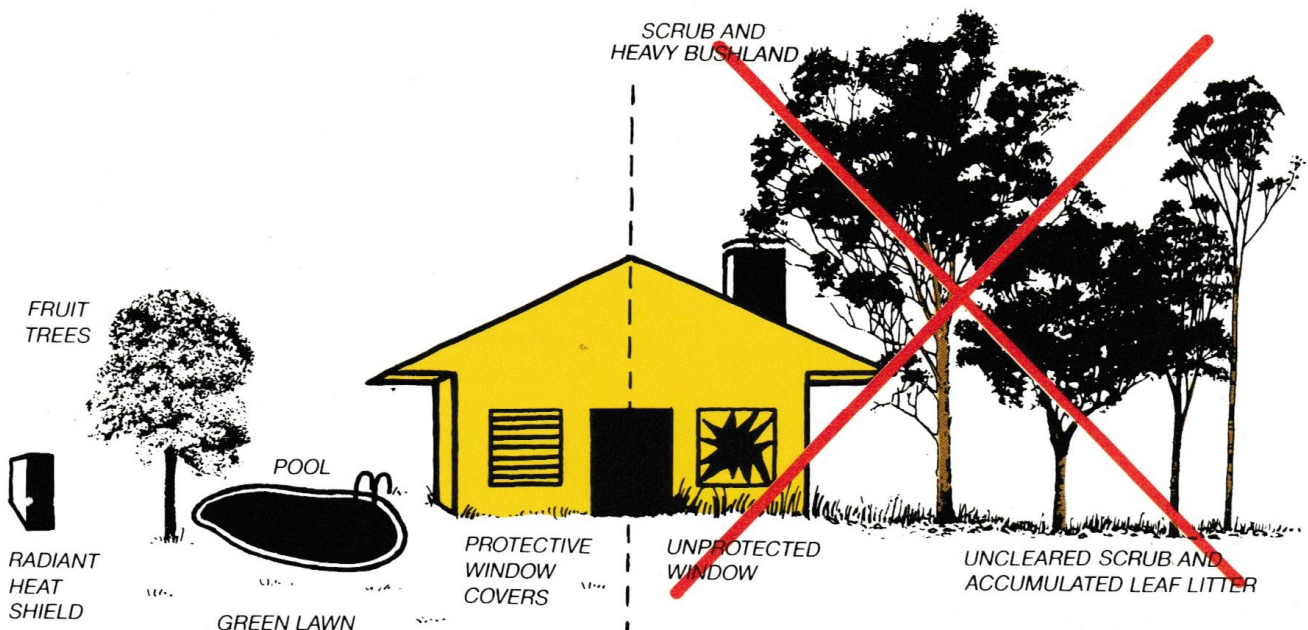
Make a safety zone

Put a 'safety zone' around your house - and make it as large as possible. On the outside edge have a protective shield of trees, a thick hedge or a solid wall or fence. This will slow the wind, cut down radiant heat, and catch flying embers. Within the safety zone:

- plant trees singly (not in clumps), and make sure they don't touch the house,
- locate the vegie garden, lawn, pool, or patio on the likely fire source side of the house, to provide low-burn areas between you and the fire,
- make sure you've cleared away long grass and other fire fuels.



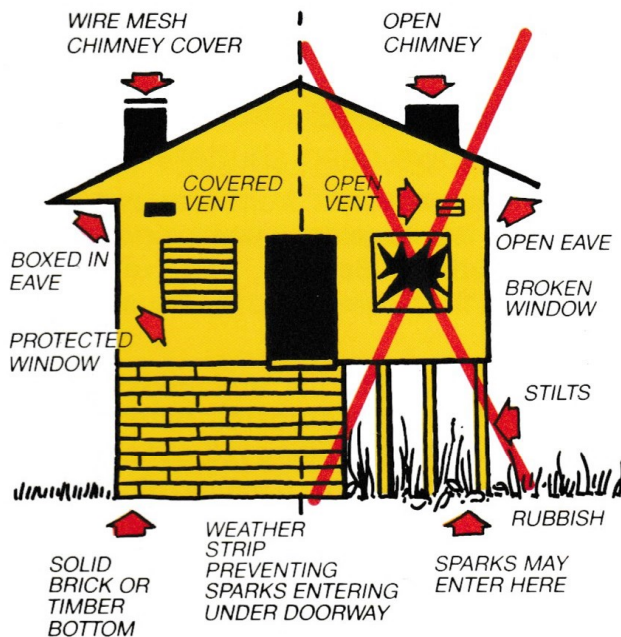
CLEAR SCRUB TO SAVE TREES



Fill all the gaps

Houses usually burn from the inside out. So block up all the gaps where sparks can get into your house.

- box in the eaves and under-house areas, to protect the roof and floor
- put metal fly wire mesh on all vents, to keep out sparks
- check all over for gaps in the roof and walls, and block them up.



Fix the fire-traps

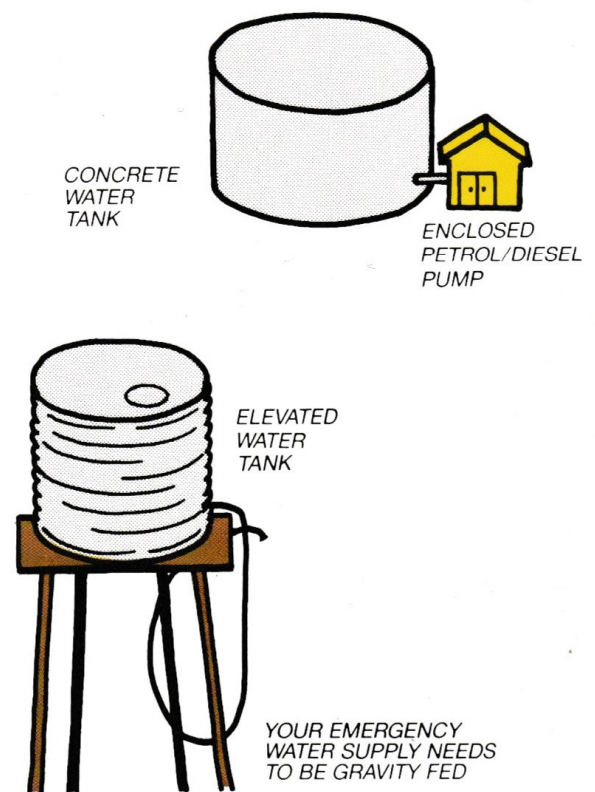
Walk around your property with a fireman's eye. Are there any fire-traps you'll regret in a bushfire?

- the wood-heap - don't pile it against or near the house
- petrol - how safe is your fuel storage? All fuel containers need to be in a proper shed, away from the house
- rubbish - clear up any timber and old junk lying around. You always meant to do it, anyway
- overhanging trees - prune off branches which overhang the roof or touch the walls
- the incinerator - it needs to be strongly built, with a lid - NOT a rusty old 200 litre (44-gallon) drum. Try not to use it at all in the summer.

Make sure there's water

In a bushfire, mains water and power supplies are likely to be cut off. So,

- put in a water tank - the larger the better
- link it with petrol/diesel pump, to provide water pressure for hoses.



HOUSE SAFETY

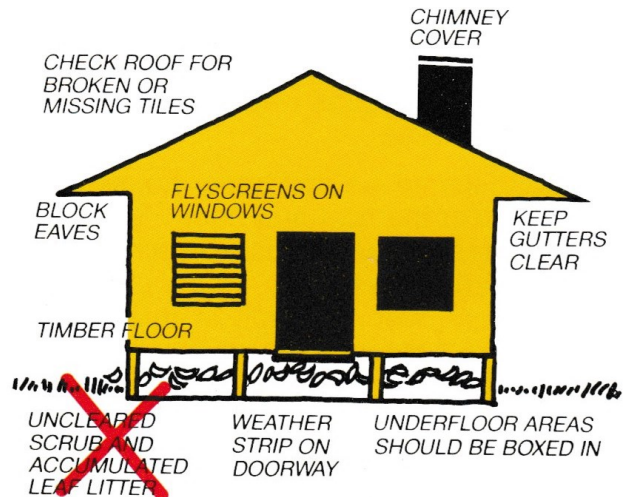
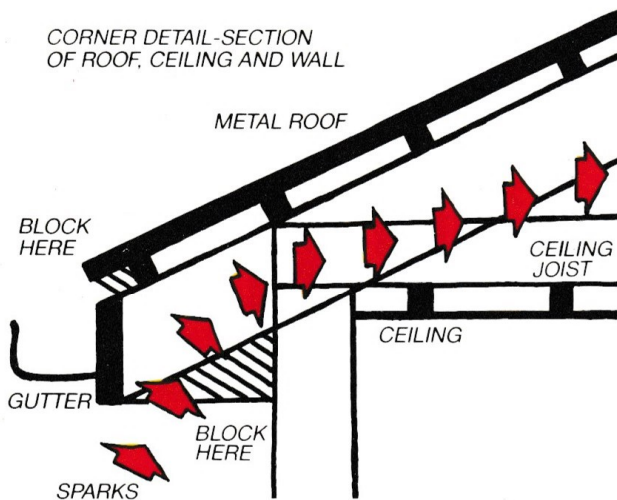
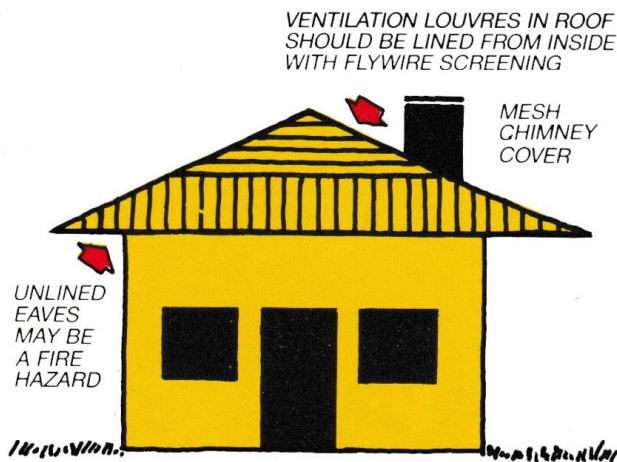
Small jobs can save lives

Simple measures - flyscreens on windows, weather stripping, gutters clear of leaves - can make all the difference in a bushfire. Here are some simple pointers which are just as useful for old houses as for newly-built ones.

Step 1

Screen out the fire

Amazingly, ordinary wire (not synthetic) flyscreens can help save your house. Fitted on every window, they reduce radiant heat (so the glass does not crack) and keep out flying embers. Screens are useful on all outside doors, too. Fine metal fly wire mesh covers should be fitted to all vents, to keep out sparks; for chimneys, use a wire mesh capping outside and a fly wire screen inside, flush with the fireplace. Doors and windows should be weather stripped.

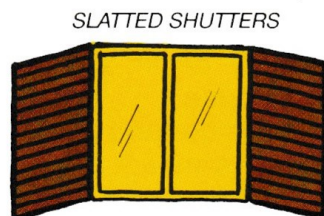


Step 2

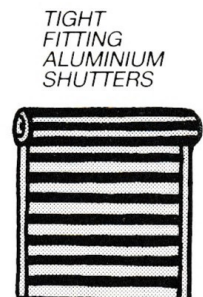
Big windows need shutters

To protect windows from breaking in the heat of a fire, consider fitting fixed or removable shutters. Besides their value in a bushfire, they'll also keep the house cool on hot days.

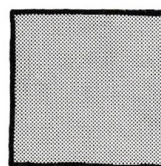
Shutters should be flat, and made of metal, fire-resistant plasterboard, hardboard or fibro-cement: tight-fitting roll-out aluminium shutters are also fine. If slatted shutters are used, they need covering on the outside with metal flywire mesh, to keep out sparks.



SLATTED SHUTTERS



TIGHT FITTING ALUMINIUM SHUTTERS

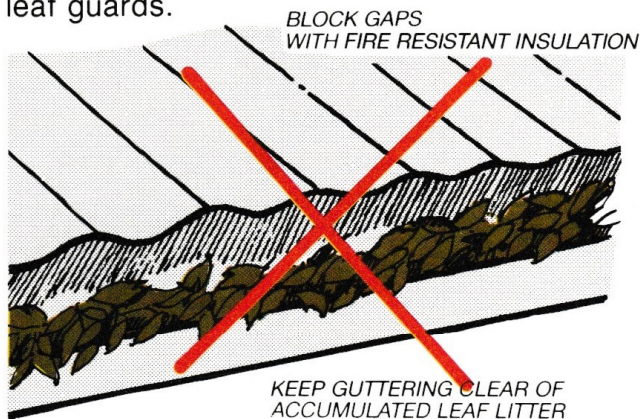


FLAT METAL SHUTTERS

Step 3

Leaf-free gutters

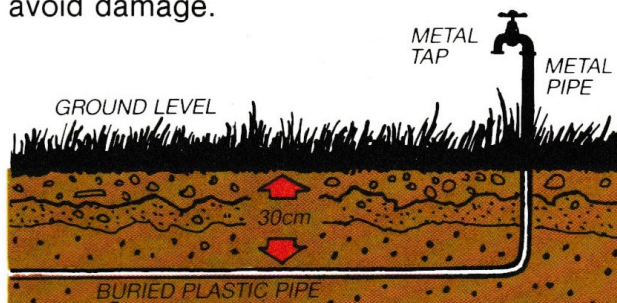
Leaves in the guttering can help a fire get into your roof. You'll need to keep cleaning out the leaves all through summer. An easier way is to fit a leafless guttering system, or leaf guards.



Step 4

Plastic pipes have melting moments

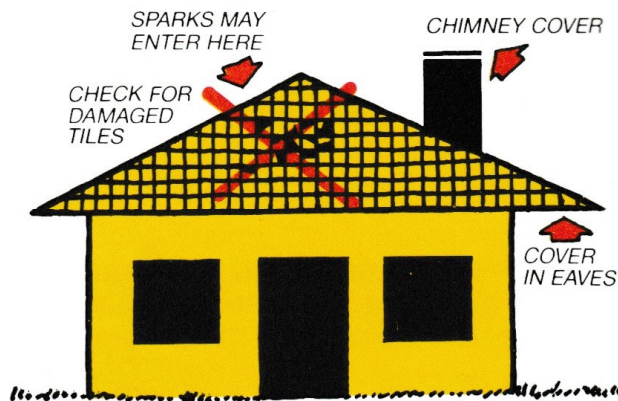
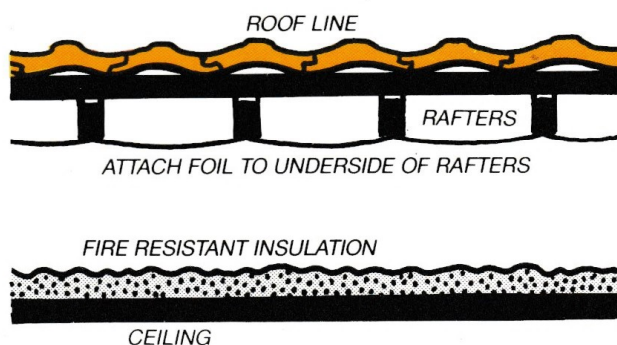
Watch out for exposed plastic water pipes and hoses. In the heat of a fire, they may melt just when you need them most. Bury plastic pipes at least 30cm underground to avoid damage.



Step 5

Ceiling safety

In established homes, burning embers may get into the roof through cracks under the tiles. You can reduce this fire risk by lining the ceiling space with fire resistant insulation, and attaching a layer of aluminium foil to the underside of the rafters.



Step 6

L.P. gas bottles

Locate L.P. gas bottles on the side of the house furthest away from the likely source of fire. Don't put them under the verandah. Make sure the pressure relief valve is pointing away from the house, and that there is no flammable material for at least six metres in front of the valve. Set the cylinders on a concrete or brick base, and fix them to a strong metal pipe. Don't worry about them - they're not likely to explode in a fire.

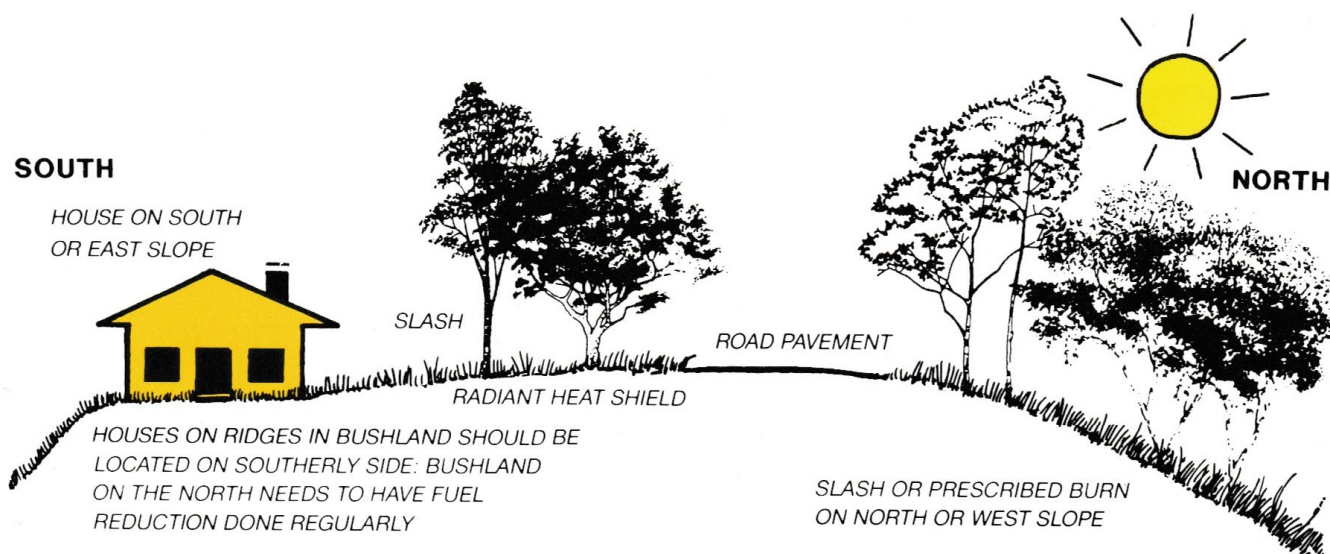


REMEMBER

Wire screens, shutters and weather strips keep out sparks
Keep leaves out of the gutter
Avoid plastic pipes - or bury them
Make the ceiling safe
Take care with gas bottles

NEW HOUSE?

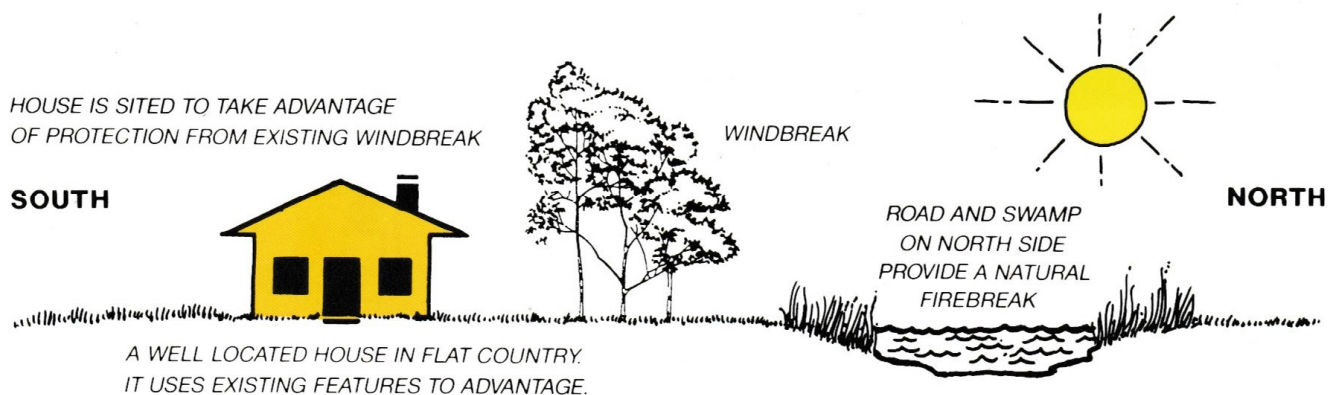
Site it with fire in mind



Step 1.

Beware hilltops

The steeper the slope, the faster a fire will race up it. So it's risky to build on the tops of hills or ridges. The lower down the hill, the safer you are - better yet, build on the flat.

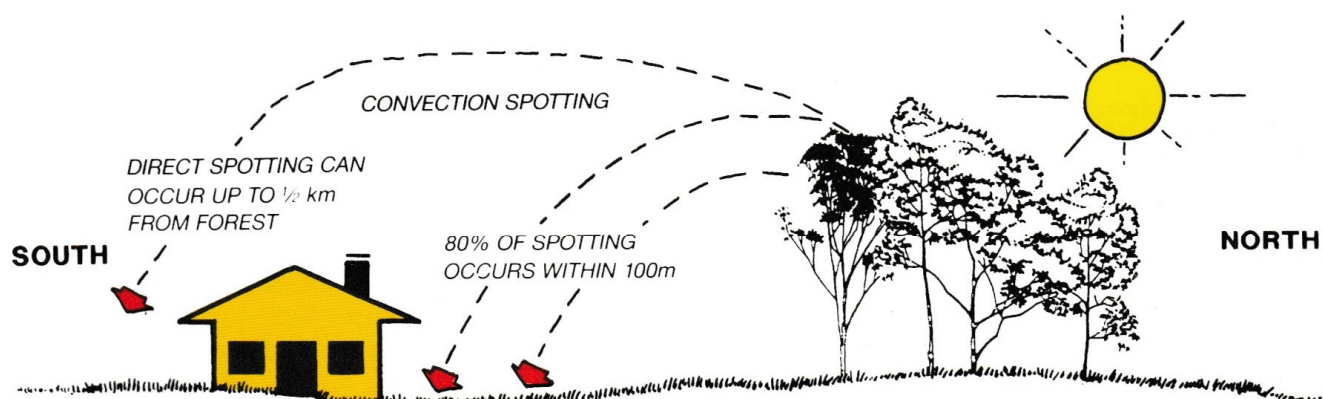


Step 2.

Size up the countryside

Before you choose a site, weigh up its good and bad points. Is there a windbreak? Maybe you can use it to protect your house (see page 22). Is there a stream or a dam? Build on the south or east side of water, for

greater protection. Steep scrubby fire-prone bushland? You'll need extra fire protection measures. Remember, good siting is the key to protecting your new home from bushfires.

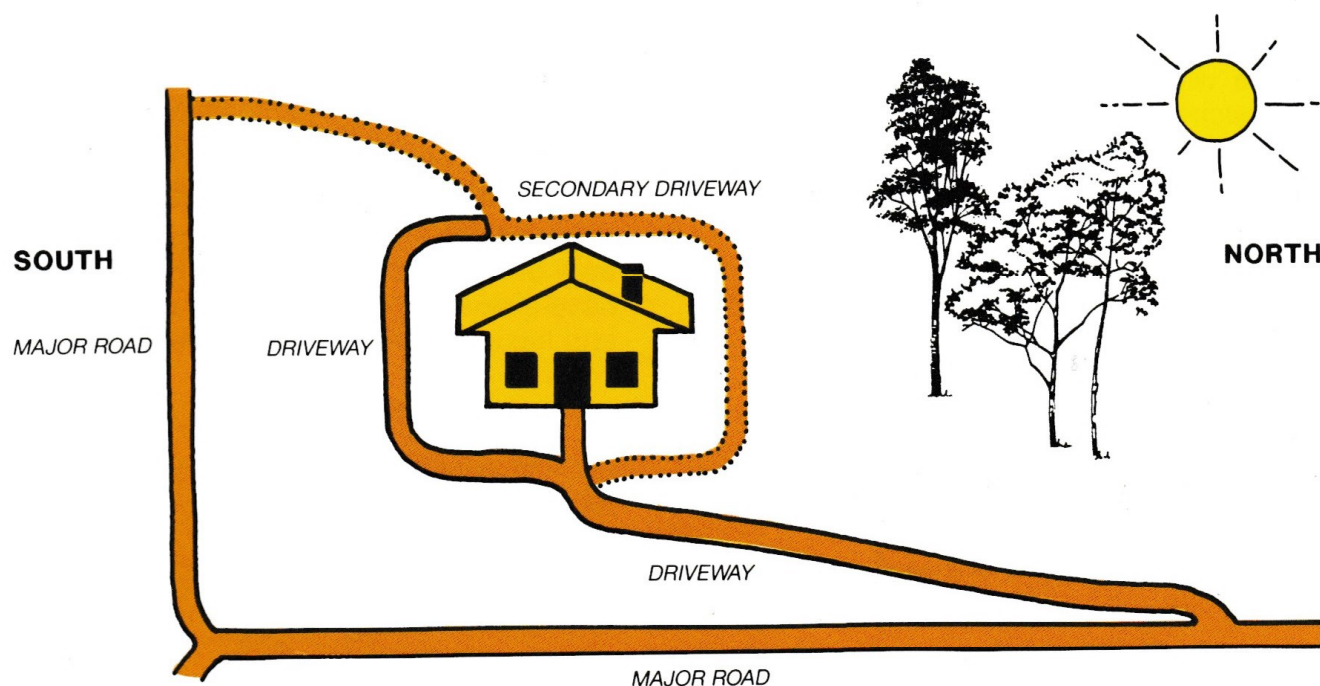


Step 3.

Keep clear of forests

Forest fires can cause 'spotting' (spot fires from burning bark and twigs) for at least half a kilometre to windward. The greatest risk is

closest to the trees. Refer diagrams on page 25.



Step 4.

Roads - the more the better

Make sure there are at least two ways in and out of your housesite. Roads can easily be blocked by fire and falling trees.

REMEMBER

Build on the flat, not on hills
Check the site for fire risks, protective features
Keep clear of forests
More than one road

Want to know more?

- Planning for a Better Fire Protection (Bushfires Board of W.A.)
 Ask you Local Council
 Ask the Bushfires Board
 P O Box 500
 SOUTH PERTH 6151
 [Tel (09) 367 0777]

HOUSE DESIGN

Basic rules for safer living

Most houses burn down in bushfires because flying embers have caught in nooks and crannies - under loose roofing, perhaps; or under verandahs, on windowsills, in sheltered recesses and doorways. A spark starts a little fire, which if unnoticed may spread - and your home burns down from the inside out. So fill in all the gaps, put shutters on the windows and avoid rough-finished timber which can catch sparks.

When you're planning your new house, here's some basic safety features to keep in mind.

Step 1

Simple shape, single storey

The safest houses have a smooth outside shape with no nooks and crannies and a low-pitched roof with no level changes. Single level houses are generally safer than split level.



Step 2

Roofing Rules

Metal sheeting is the best - it can withstand falling trees better than other roofing materials, and it's easier to close off from sparks. If you use tiles, they need to be well-fitted, with fire-resistant sarking (e.g. fibreglass based aluminium foil) beneath them.

Avoid roofing materials which catch fire easily - like timber shingles, shakes and asphalt shingles.

A low-profile roof reduces wind turbulence; steer clear of level changes, and valleys where leaves and debris can gather.

If your house is in dense bushland, it's worth taking extra measures to protect the rafters from burning. Put a layer of aluminium foil above and below them, so the rafters are fully enclosed; this reduces the oxygen supply which a fire needs in order to keep burning. If you have cathedral ceilings, fill up the space with fire resistant insulation for the same reason.

High winds occur in fires. Make sure your roof is firmly anchored.



Step 3

Skylights can cause problems

Plastic skylights may melt; glass skylights may break, letting in the fire. If you must have a skylight, use flat wire-meshed glass and have a removable outside cover for it.



Step 4

No stilts, please

Houses on stilts can be fire-traps. Air turbulence, and any burnable material under the house, help a fire get under your guard and into the flooring. For safety, cut a bench into the hillside, and build on a concrete slab. In any case, keep the floor as close to the ground as possible.

Step 5

Use safe building materials

Brick, mud brick, fibro and weatherboards are all O.K., so long as the paint on timber walls is kept in good condition. However, vinyl weatherboards, rough timber and some other claddings may cause problems in a fire, by warping or catching sparks.

If possible, have bricks or other non-burnable material at ground level around the walls.

Watch out for steel roof trusses on solid brick or concrete walls. In a fire, the steel may expand and cause the walls to weaken or collapse. Wood trusses are a good alternative.



Step 6

Timber - rough is risky

If possible, steer clear of elevated timber decking, stairs or raised timber verandahs. If you do use them, remember that rough-sawn timber catches dust, which is highly inflammable. For safety, use a dense hardwood timber like jarrah for exposed rafters and external timberwork. Give it a smooth or painted finish - don't use flammable coatings like tar or resinous compounds, which may catch fire easily.



REMEMBER

Simple shape, single storey

Low-pitched roof - no level changes or skylights

Build on the ground - no stilts

Use safe building materials

Rough timber is risky

TIMBER HOUSE

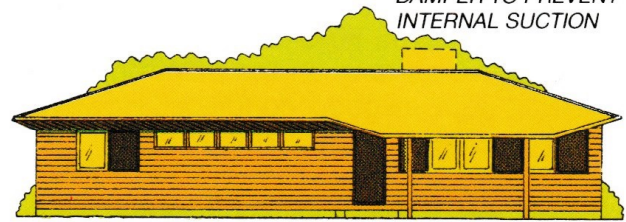
Wins bushfire design award

It's not true that timber houses can't be safe in a fire. This design won an Australia-wide competition for a bushfire resistant house. The competition, sponsored by Boral Ltd., was judged by an independent panel of judges, and shows that, with a little care and thought, an ordinary house can be a safe house. Timber weatherboards have been rounded off to minimise ledges where sparks can lodge. For even greater safety, the house could be built on a concrete slab.

Working drawings of the winning design are available from the Timber Promotion Council, 184 Whitehorse Road, Blackburn, Victoria, 3130

Telephone: (03) 877 2666

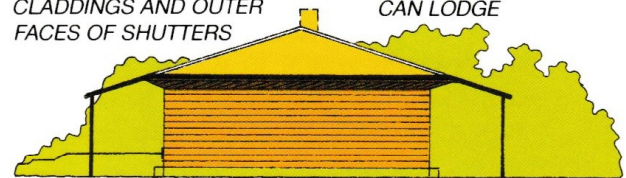
CHIMNEY IF USED TO HAVE CLOSABLE DAMPER TO PREVENT INTERNAL SUCTION



SOUTH ELEVATION

WHITE OR LIGHT-COLOURED PAINT OR STAIN TO EXTERNAL CLADDINGS AND OUTER FACES OF SHUTTERS

ROOF HAS NO VALLEYS WHERE DEBRIS CAN LODGE

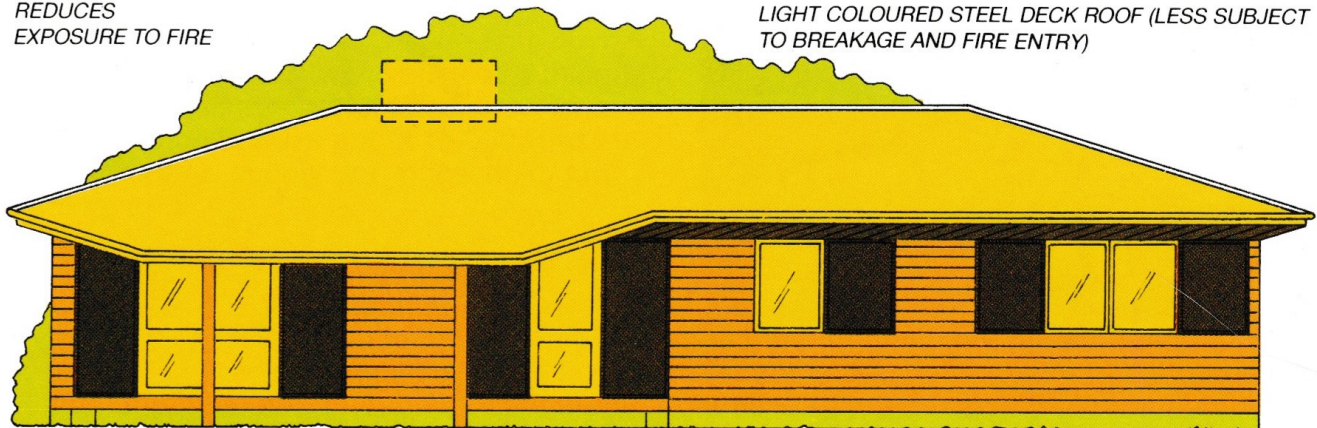


EAST ELEVATION

©Timber Promotion Council 1983. Used by permission.

LOW-PROFILE SINGLE STOREY HOUSE REDUCES EXPOSURE TO FIRE

HIP ROOF GIVES A LOW PROFILE FACING ALL DIRECTIONS. ROOF PITCH BETWEEN 12 AND 21° TO MINIMIZE TURBULENCE. LIGHT COLOURED STEEL DECK ROOF (LESS SUBJECT TO BREAKAGE AND FIRE ENTRY)

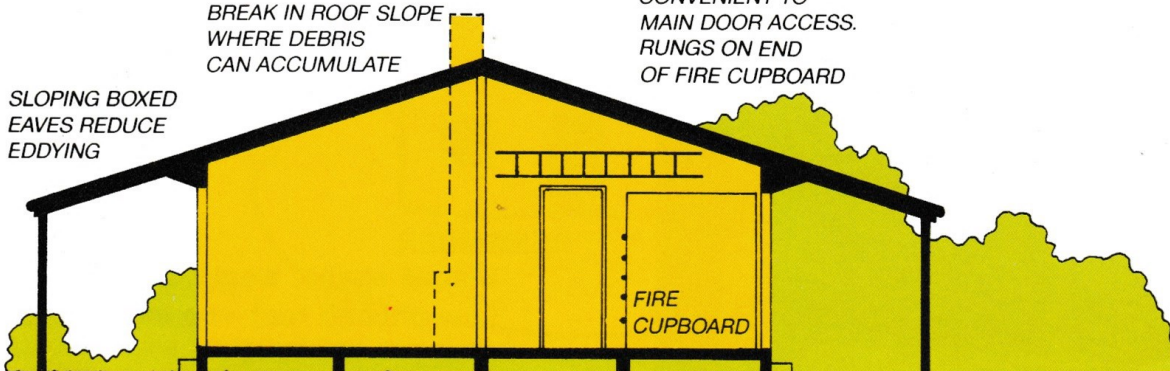


NORTH ELEVATION

VERANDAHS HAVE NO BREAK IN ROOF SLOPE WHERE DEBRIS CAN ACCUMULATE

LADDER STORAGE CONVENIENT TO MAIN DOOR ACCESS. RUNGS ON END OF FIRE CUPBOARD

SLOPING BOXED EAVES REDUCE EDDYING



FLOOR AT MINIMUM CLEARANCE TO GROUND

HARDWOOD FRAMING TO FLOOR, WALLS AND ROOF

DOOR SEALS AND WEATHER-STRIPPING TO EXTERNAL DOORS

YOUR HOME

It's your refuge!

The safest place around in a bushfire may well be your own home. (If you've followed the advice in this book, that is). It's certainly safer than being out in the open, and it's better than trying to make a dash by car through the fire front, on roads blocked by emergency traffic or falling trees.

Think about you home as a fire refuge. Have you filled in all the gaps, to keep out sparks? Is the space under the verandah boxed in? How good is the water supply? Should you put shutters on the windows?

If you feel confident that your house would be safe in a fire, make plans to use it as your fire refuge. When the fire front has passed - and this may only take five or ten minutes - you'll be on hand to put out any little fires that have started around the house, before they have time to get a hold. That way, you should save your home.

A refuge in the laundry

A good plan is to pick one room where the family will shelter during a fire, and to make it as safe and smoke-free as you can. The laundry may be a good place. Here's some pointers:

- if the fire is most likely to come from the north, have your refuge on the south side of the house.
- on steep sites, have it upslope rather than downslope (since the most sever fires will be those coming up the hill).

- have a door leading outside to a sheltered area with a wall or fence to keep off radiant heat. The area should be paved, or have short green grass.
- plan to keep out heat, smoke, sparks and fumes by weatherstripping all doors, and making sure that all vents can be sealed.
- have a small window - you'll want to see how the fire is going. Use wired glass, for strength.

Safety features

If you choose a room built of strong, low-flammability materials, so much the better. Ideally, there should be

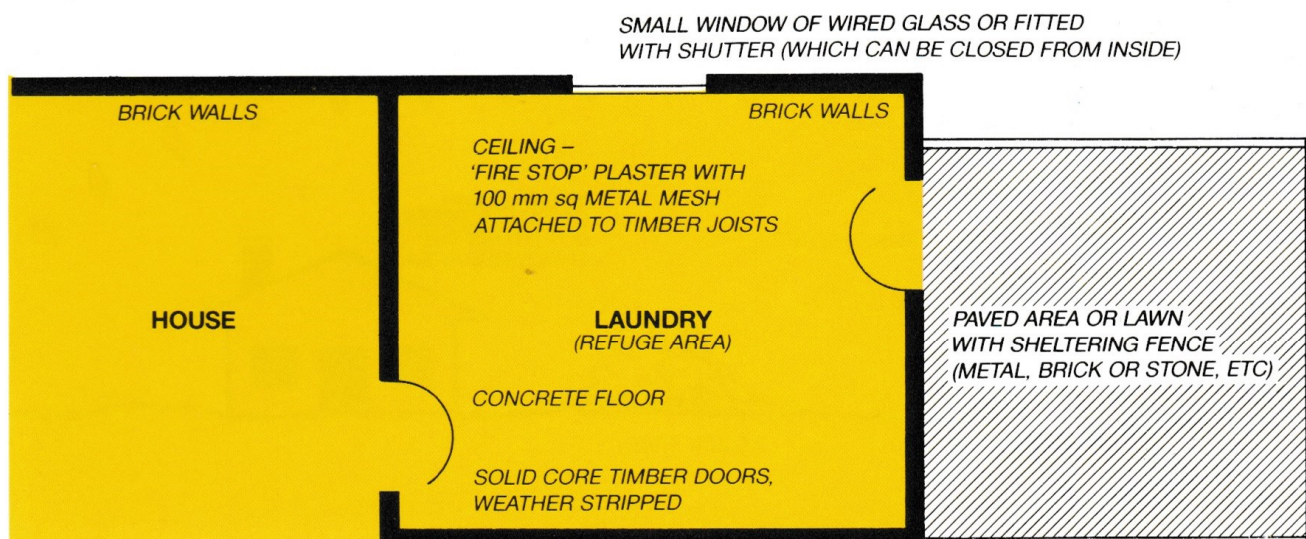
- a concrete floor
- solid brick walls
- a protected ceiling. Ceiling joists should be lined both sides with double layered fire resistant plasterboard; put metal mesh reinforcing (100mm squares) above this, to stop falling material going through the ceiling.

If you're using the laundry, you have the added advantage of a water supply on tap.

Fire Equipment

Your special refuge room is the place to store -

- fire clothes - long trousers, woollen shirts, strong shoes for all the family (see page 7)
- fire fighting equipment - buckets, hoses, rakes, knapsack spray (see pages 34-35)



WINDBREAKS

So useful, so safe

Windbreaks - beautiful to look at, useful for protecting houses, livestock and crops.

But are they a fire hazard?

No, say the fire experts - not if they are well maintained. In fact, a well-designed and maintained windbreak **will protect** homes and buildings from bushfires. Windbreaks

- REDUCE WIND SPEED
- FILTER OUT FLYING EMBERS
- CHECK THE SPREAD OF FIRE

Here's how they do it, and what you need to know to get the most from your windbreaks.

Wind Speed

When the wind hits the windbreak, it is slowed down, and forced up and over the trees. So there's a protected area on the lee-ward side, stretching as much as thirty times the height of the trees (about 600 metres, if your windbreak is 20 metres high). The amount of wind protection depends on how dense the windbreak is. If the trees are very dense there is more protection but over a smaller area; whereas a more open windbreak gives a lower level of protection but over a longer distance.

If you're planting a windbreak around you house, make it a dense one for maximum protection, and build about 30 metres away from it.

Flying Embers

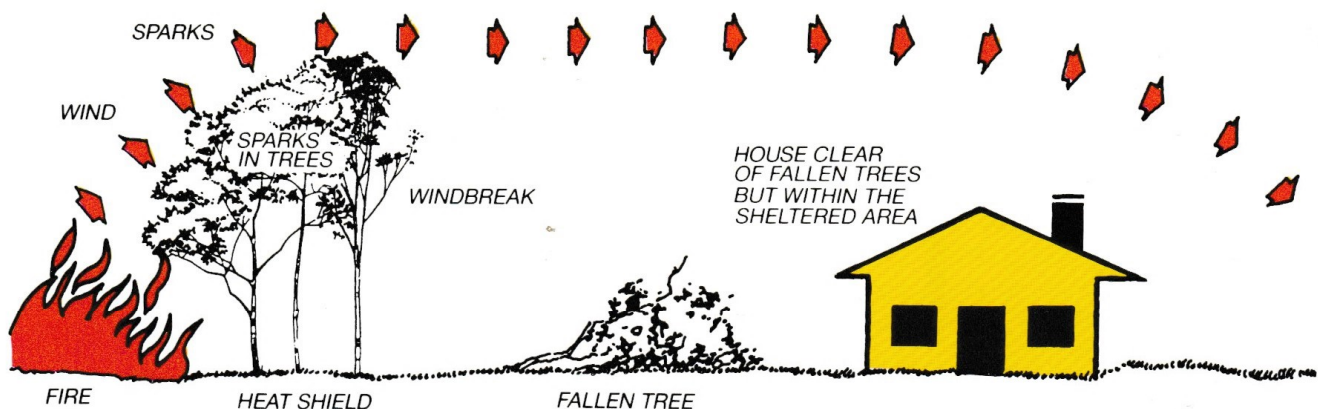
In a bushfire, the greatest risk to your house is not the flames but flying embers blown around in the strong winds. Trees can catch many of these sparks and burning twigs before they get to the house. Because green leaves contain a lot of water, trees do not usually catch fire from flying embers, although this can happen if there is too much dead material - twigs, leaves and loose bark - on the tree.

Checking the Fire

Trees slow the wind speed, and so help to check the fire. They also provide a shield from radiant heat. Under the trees, where roots have suppressed the grass, there is usually a bare area which acts as a natural fire-break, again helping to slow down the flames.

Getting the Most From Windbreaks

A single row of trees is good; a multi-row windbreak is better; and a series of windbreaks provide the best protection from wind and fire.



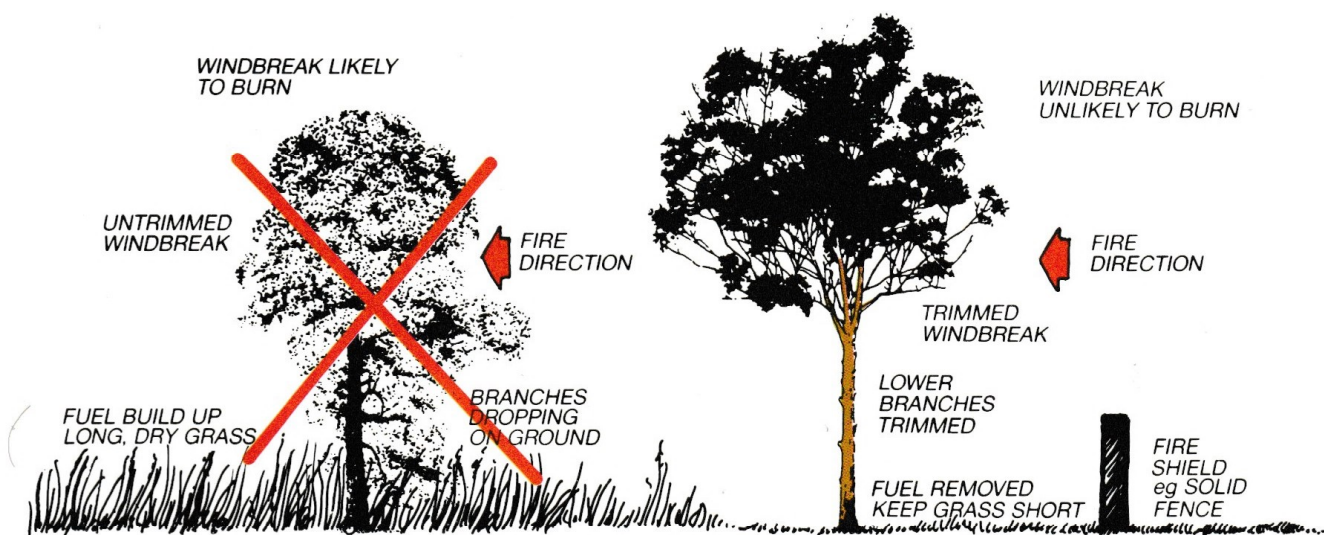
For best results:

- plant on the north and east sides of the paddock or property - better yet plant on all four sides.
- a dense windbreak, rather than an open one, gives your house the best protection.
- where possible, the house should be about 30 metres on the leeward side of the trees (i.e. the distance should be 1 to 3 times the full-grown height of the trees). In this position, the house is beyond the range of any falling trees but gets maximum shelter from wind and sparks.
- minimum length of the windbreak should be 100 metres.
- the Department of Conservation and Land Management can advise on the best species to plant on your land.

Don't Let Your Windbreak Burn!

A ground fire, will not run up into a tree if there is a clear break between the ground and the branches. So prune off the lower branches to about 2 metres up the trunk (some species self-prune these lower branches anyway). Make sure dead leaves, loose bark and other litter are not allowed to build up under the trees and that nearby grass is kept short. A solid fence along the windward side of the windbreak blocks low winds and makes doubly sure the trees should not burn.

*DON'T LET YOUR WINDBREAK BURN.
MAKE EXISTING WINDBREAKS SAFE FROM FIRE*



GARDENS

Good grounds for feeling safe

In a bushfire, a well-designed garden will provide a green 'safety zone' around your house. The principles are simple:

- **USE YOUR TREES**
They can protect you from strong winds, killer heat and flying embers.
- **REMOVE FUEL**
Get rid of long dry grass, dead leaves and twigs, and flammable shrubs.
- **PICK YOUR PLANTS**
Some trees and shrubs are much more useful than others in a bushfire.
- **DESIGN FOR SAFETY**
Put low fire-risk features - lawns, gravel paths, vegetable gardens, pools and patios - between you and the fire. Build in 'heat shields' to protect your plants and the house.

Here's some things to think about, when you're planning a garden with bushfires in mind.

Fact and Fancy About Trees

Some people think the safest thing to do is to chop down all the trees around your house. This is not usually true.

TREES CAN SAVE YOUR HOUSE IN A BUSHFIRE

In a hot dry summer, trees are likely to be the greenest and wettest things around. A wind-break will help protect your house from the full force of a bushfire. Or you can plant belts of trees around the edge of your block, to lift the wind over your house - shortest near the fence, tallest on the inside edge.

You want your trees to carry the hot fire-laden winds UP AND OVER your house. But you don't want them to catch fire; and if they do catch, you don't want them to spread the fire to other trees or your house.



BOTTLEBRUSH – PRETTY BUT BURNS READILY

Rule 1

Keep clear of the house

Trim back branches which overhang the roof or touch the walls.



Rule 2

Trim lower branches

A ground fire will have trouble getting up into the trees if you prune the lower branches - up to, say, 2 metres off the ground.



Rule 3

Break the canopy

Inside the windbreak, plant trees singly or in small clumps - NOT in a continuous band. If your house is close to timbered country, make sure there's a good break in the tree canopy between the forest and your own trees.

Rule 4

Get rid of dry fuel

Trees almost always catch fire because the dead leaves and litter under them are burning. So get rid of dead material under trees - it's a job you may have to keep doing all summer. Rake it up, dig it in, or pick it up with a motor mower.

Here's a tip: watch out for dry fuel IN, as well as UNDER, the trees. Get rid of hanging bark, dead branches, and dead sections of hedge.



Choosing Plants to Protect Your Home

Some plants are very flammable: others do not burn easily, and will give good protection for your home. Those that are best in a fire contain lots of water or salt in their leaves, don't have too many dead leaves and twigs, and don't contain volatile oils.

This list shows how it works. The trees and shrubs are grouped in order of decreasing fire resistance - low-burn plants at the top, and more flammable species at the bottom.



BUT REMEMBER: The main difference between a high-risk tree and a safe tree is the amount of dry fuel underneath it.

Fruit and Vegies are Fine

A vegetable patch makes a good green fire break; so locate it, if you can, on the side of the house most at risk from bushfires. Fruit trees give excellent fire protection - plant as many as you like, all around the house. If you're starting an orchard, locate it north or east of the house.

Heat Shields Really Help

Fires spread because the radiant heat from the fire-front dries out the vegetation enough to let it burn. So anything that stops this heat will protect your plants from burning - and also protect your house. You can build 'heat shields' into your garden to look like part of the grand design; earth mounds planted with succulents, a windbreak for the barbecue area, a fence or wall to support vines or espalier fruit trees. Heat shields can be made of any solid material and are best located on the most fire-prone sides of your garden.

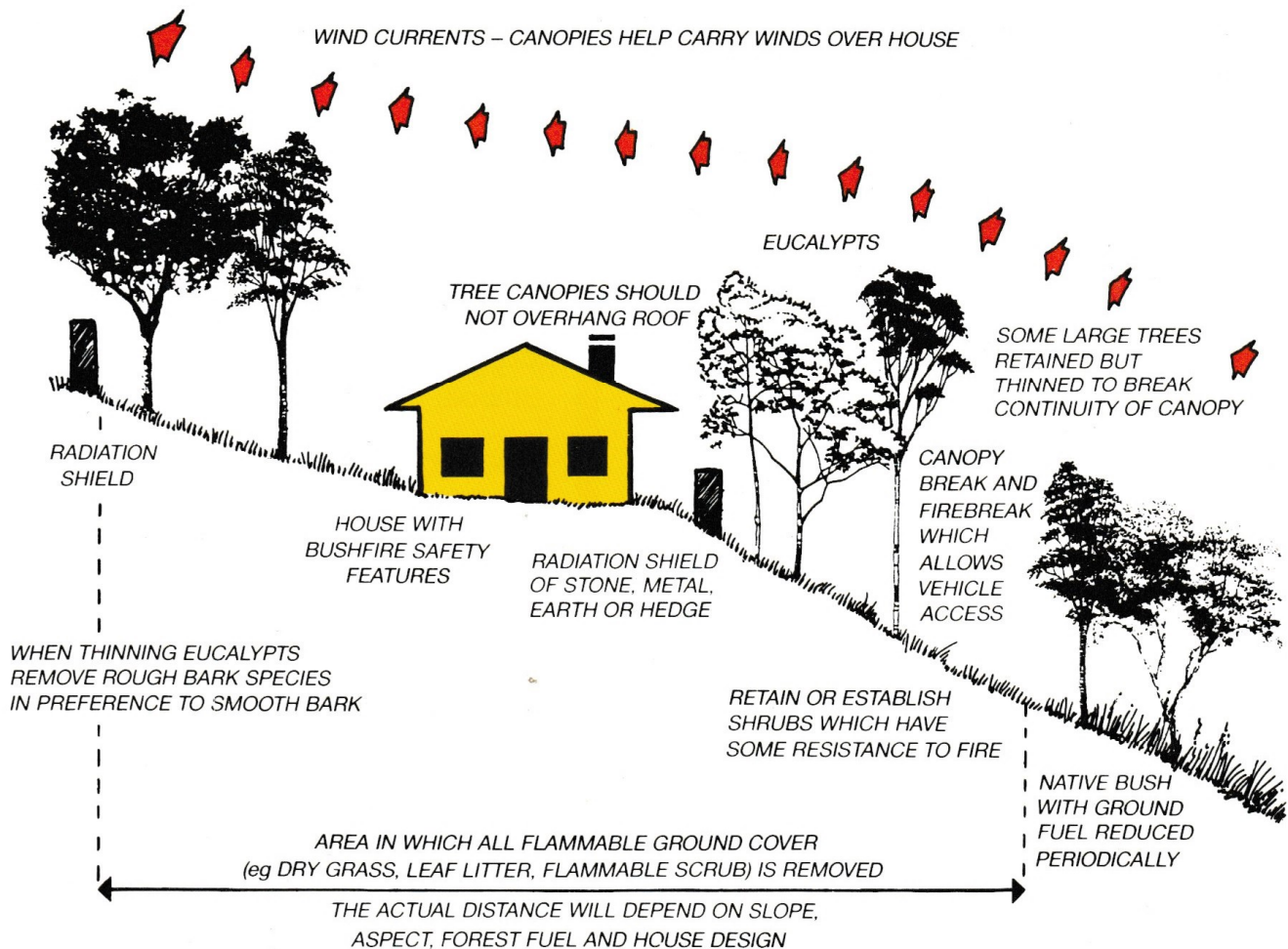
Green Lawns - or Gravel

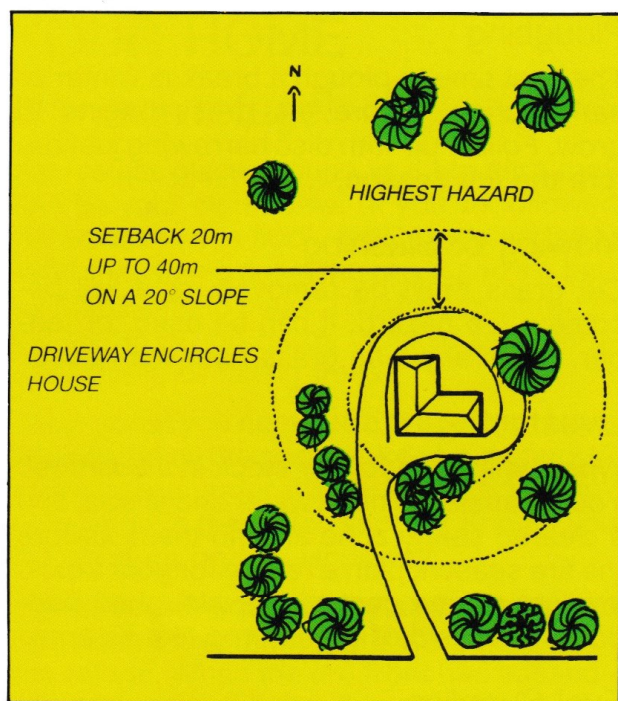
You need non-burnable or low-risk ground cover close to the house. A green lawn works well (keep it mowed short, and as green as possible, during the fire season). A wide gravel path, or any sort of paving, is fine too. Low-burn shrubs can be set in the lawn or paving.

Houses In Forest Country

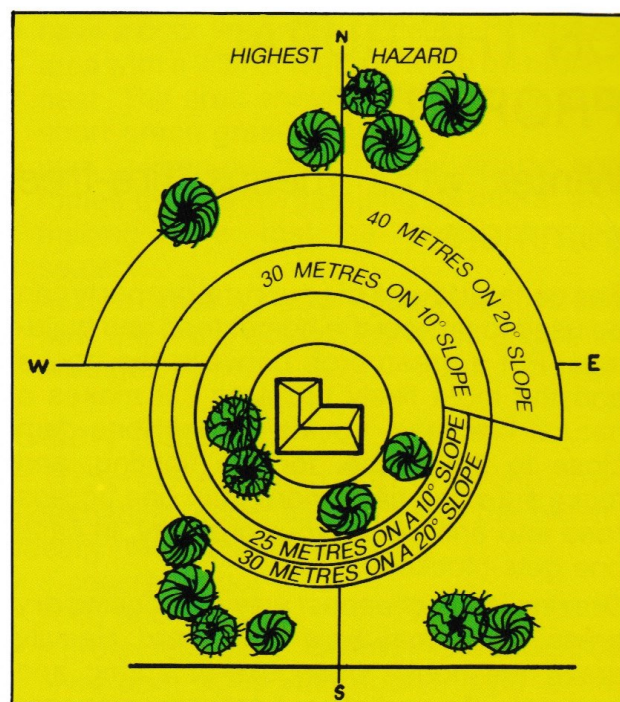
If you live in the middle of a forest, the fire risk may be increased if you cut down all the trees around your house. You may create a 'hole' in the tree canopy which sucks in the wind - and the fire with it. The best plan is to thin the trees to give a 'park-like' look, and keep the ground beneath them clear of fuel. The steeper the slope, the larger the area you'll need to clear of fuel - start with a minimum of 20 metres from the house on flat land, and add at least a metre for each degree of slope.

IMPROVING BUSHFIRE SAFETY IN NATIVE BUSHLAND





FROM ARTICLE BY R.H. LUKE 1982
 "HAZARD REDUCTION FOR THE PROTECTION
 OF HOUSES IN BUSHLAND AREAS"



FUEL REDUCTION ACCORDING TO SLOPE OF SITE

We can work together. We can minimise risk by the community getting together and carrying out fuel reduction works.

If nothing is done the risks are higher.

Intense growth on the ground surface may support a 'crown-fire'. (That is a fire in the tree tops).

Once that happens, under high wind conditions survival of people and animals in the path of the fire is threatened.

Convective gases from burning eucalypts can be carried forward under the influence of strong winds.

Tree tops will pre-heat and ignite.

On sloping ground this fire can be supported up to 100 metres or more ahead of the surface fire.

Steeper sites are more vulnerable—because of the acute angle of pre-heating. If you **reduce** ground fuel—with adjoining neighbours you will reduce fire intensity, and the likelihood of crowning 'tree-top' fires.

ON THE RURAL PROPERTY

Winter work means fire-free summers

The general layout of your rural property can be used to protect the homestead and buildings. Put a green crop between the house and the most likely fire area - it makes a natural firebreak. Locate at least one dam close to the house, for fire fighting, and make sure you have more than one access road into and out of your property, in case one gets blocked.

Grazing is the cheapest way of reducing dry grass, which may be a fire hazard. Heavily graze the house paddocks in spring and summer. As part of your property management program, consider the need for firebreaks and pre-fire season burning-off to reduce fuel levels. You should take special measures to protect your livestock, haystacks and fuel supplies. In most areas there are Local Government requirements.

Firebreaks

Firebreaks may not stop a major fire, but they can prevent a small blaze turning into a nightmare. Your Local Council will have a firebreak requirement on your property. Contact your Council for further details.

Green Summer Crops

Potato, rape or lucerne crops, among others, can provide a green firebreak near the house.



Ploughing

The best time to plough a break is winter or early spring, before the grass begins to grow. Follow up with disc harrowing just before the fire season.

Mowing or Slashing

Cut grass must be removed, or it will become a fire hazard. It can be used for fodder. Slash any long grass near the house.

Livestock

Where will you put your stock in a bushfire? Your animals will need water and shade, and a cleared safety zone around them. Before the fire season, plan a refuge for your stock: it might be the centre of a ploughed paddock, or a field of green crop like lucerne.

Fuel Supplies

Keep fuel away from haystacks and buildings. For large amounts of flammable fuels, use elevated storages or underground tanks. Smaller quantities in drums should be in a fully enclosed shed, well away from the house.

Remember

Many fires start from burning off operations which get out of hand. **MAKE SURE YOU KNOW WHAT YOU ARE DOING - CHECK FIRST WITH YOUR LOCAL BUSHFIRE CONTROL OFFICER.**

Burning Off

You will need a permit during the 'Restricted Burning Period' - check with the Fire Control Officer or Council. It's important to comply with the conditions of the permit. Whether or not you have a permit, it's illegal to burn off on any day of very high or extreme fire danger.

Strip burning is best - but **TAKE GREAT CARE, AND KEEP THE BURNING AREA SMALL AND ALWAYS UNDER CONTROL.** Plough a firebreak around the area to be burnt, have fire fighting equipment on hand (knapsack spray, water) and burn back into the wind. You'll need enough people with you to keep the fire under constant control. Comply with permit conditions and seek advice from the Fire Control Officer.

Haystacks

You'll want to protect your fodder supplies, and also minimise the fire risk from haystacks. So locate them away from the house, separated from each other, and run a

ploughed firebreak around them. Or, fence off the hay and allow grazing right up to the stack. **DON'T BURN OFF AROUND HAYSTACKS.**



WINDBREAKS, FIREBREAKS AND GOOD LAYOUT MAKE A RURAL PROPERTY SAFER

WATER SUPPLIES

Vital for fire fighting

The garden hose can save your house in a bushfire, if you've made the right preparations. But you'll need an emergency supply, because in most bushfires, the MAINS WATER SUPPLY is likely to fail and ELECTRIC POWER SUPPLIES will probably be cut off.

Your emergency supply needs to be gravity-fed, unless you put in a petrol/diesel pump to provide water pressure.

Here's how to keep the water flowing in a fire.

Store It

If your house is on mains water, you can run it through a storage tank, so that the tank is always full. If you use tanks anyway, make sure that a water supply for fire-fighting is always kept in reserve. A swimming pool or dam is fine.

How much to store:

To protect the house itself, you need a minimum of 1,000 litres - preferably more. For a sprinkler system, allow about 15,000 litres - plus a further supply for household fire fighting.

Raise It

Your emergency supply should be gravity-fed. Put the tank on a raised tank stand, and put another small tank in the ceiling. Fit a tap to the ceiling tank, for filling buckets.

Protect It

A metal tank stand may buckle in the heat of a bushfire, so put a heat shield around it - corrugated iron is fine. Don't store the woodheap, or any other burnable material, under the tank stand.

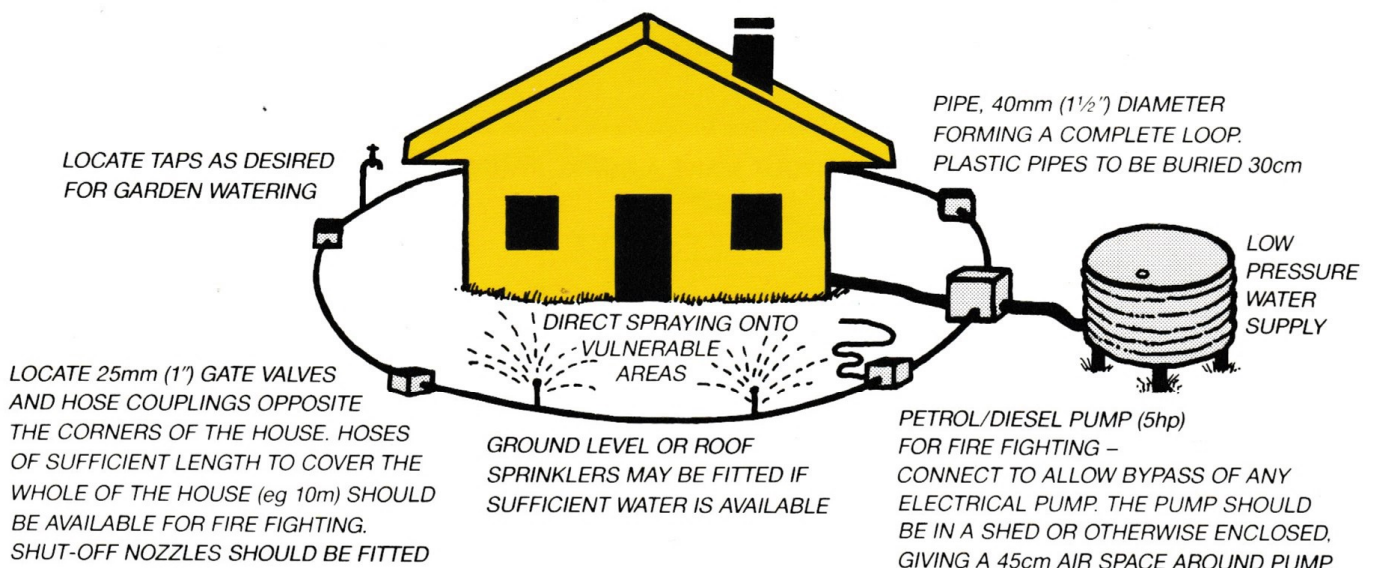
Pump It

If you are mechanically minded, a small pump can be a real help in boosting water pressure for your hoses. A small (5 hp) petrol or diesel pump is all you need - not an electric one, since there probably won't be any power. Put the pump in a shed to protect it from radiant heat, and fit an in-line filter to keep out debris. But don't rely on a pump unless you're prepared to maintain it in working order.

Sprinklers and Hoses

Run the reticulation system in a loop right around the house. Put in gate valves and hose couplings at each corner, so you can deliver the full force of water wherever you need it.

WATER DISTRIBUTION FOR FIRE PROTECTION



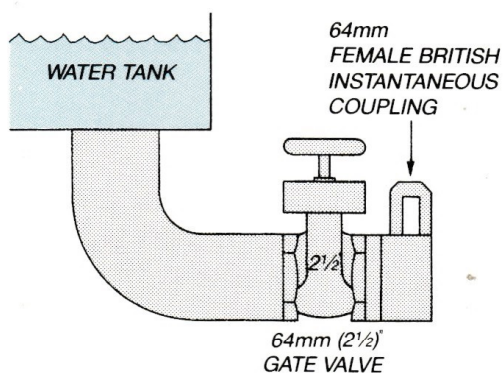
If you have a sprinkler system, direct the sprays on the parts of the house most at risk - the windows, eaves, LP gas cylinder, verandah.

Remember that plastic water pipes are likely to melt: use metal pipes, or bury plastic ones at least 30cm underground. Make sure you have enough hoses to cover all the house. **If they are plastic, you'll need to take them inside while the fire front passes, to stop them melting.**



UNDER EXTREME BUSHFIRE CONDITIONS, ELEVATED WATER SUPPLY TANKS MAY CRACK AS REINFORCING METAL EXPANDS. PLASTIC PIPES ABOVE GROUND MAY ALSO FAIL.

Tanks should be fitted with a 64mm Female British Instantaneous Coupling to enable brigade appliance to couple to them and should be fitted with a gate valve.



KEEP CLEAR OF POWER LINES

Trees and power lines don't mix. Fires can start if branches bring down the line, or if trees are too close.

Private Power Lines

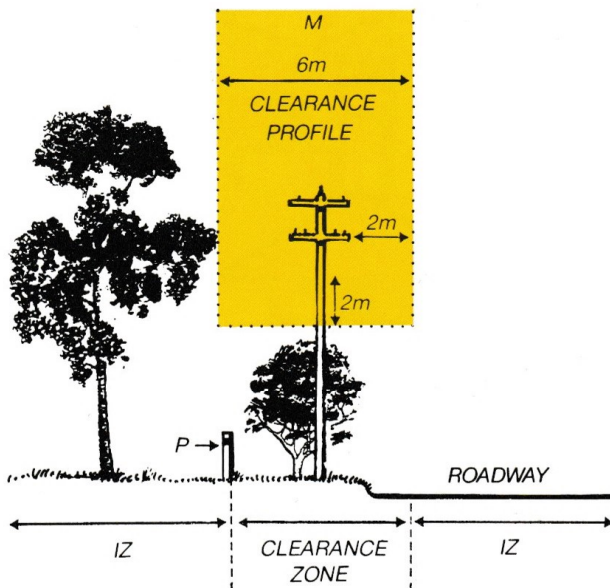
Maintenance of a private power line on your property is your responsibility. If you're not sure whether you have a private power line... check with the SEC.

Here's what you need to do:

POWERLINE CLEARING STANDARDS

Urban Areas

Clearances of cultivated trees from powerlines in urban streets must be maintained by the State Energy Commission and responsible Authorities.



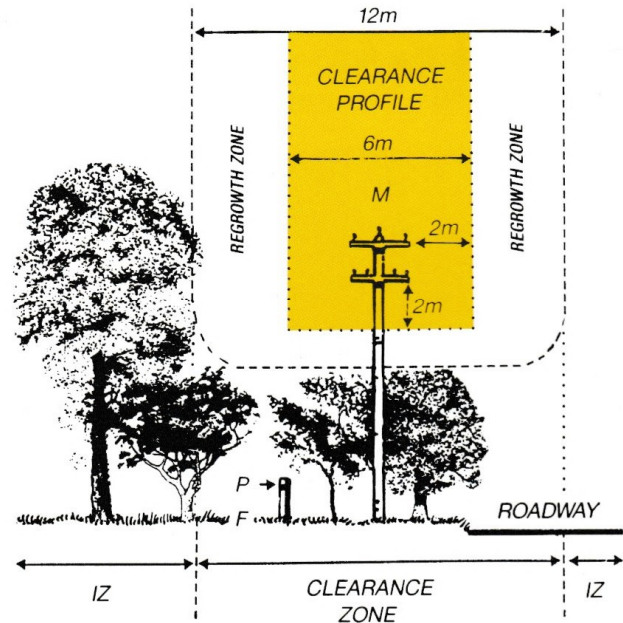
**RECOMMENDED CLEARANCE PROFILE
URBAN AREAS**

LEGEND

- P PROPERTY BOUNDARY
- IZ INSPECTION ZONE
- M = ALL VEGETATION TO MAINTAINED
CLEAR OF THIS SPACE

Semi Rural Areas

The State Energy Commission will regularly inspect powerlines in rural road reserves, including hobby farms and deferred urban areas, and arrange for clearing of self sown vegetation.



**RECOMMENDED CLEARANCE PROFILE
SEMI RURAL AREAS**

LEGEND

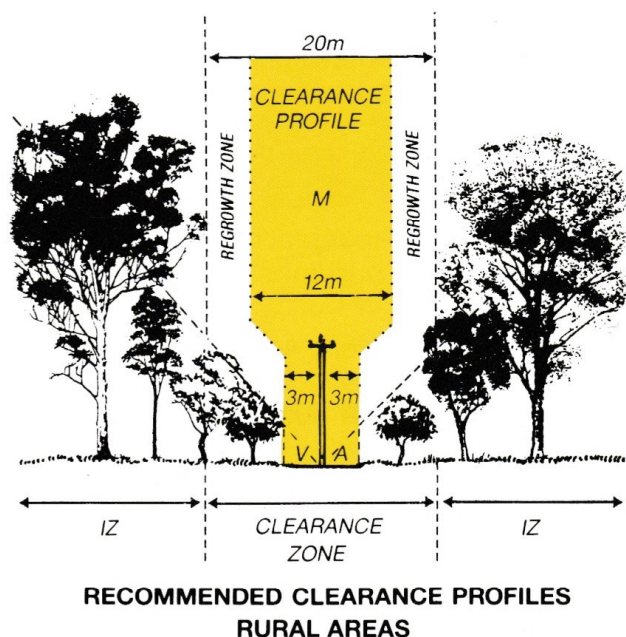
- P PROPERTY BOUNDARY
- F FIRE BREAK
- IZ INSPECTION ZONE
- M = ALL VEGETATION TO BE MAINTAINED
CLEAR OF THIS SPACE

Clearances around rural lines have to be greater than in urban areas because the span lengths are longer. The fire risk is also greater.

Rural and Forest Areas

These include lines in farming and forest areas and areas not included in urban or semi rural areas.

Clearances around these lines must be increased because of the longer span lengths and greater fire risk.



LEGEND

- VA VEHICLE ACCESS
- IZ INSPECTION ZONE
- M ALL VEGETATION TO BE MAINTAINED
CLEAR OF THE SPACE

HOW WILL THE CLEARING BE DONE?

Urban and Semi Rural Areas

The State Energy Commission will arrange cutting of all fast growing self sown species in the "Clearance Zone" at ground level and treat them with an approved herbicide to stop regrowth.

Slow growing self sown species will be lopped 2 metres clear of the wires.

All trees in the "Inspection Zone" (refer to diagrams) which threaten the powerlines, must be removed. These include trees that are:

- dead or dying
- rotten
- severely leaning towards the line

The occupier of private land must prune all planted trees in the Clearance and Inspection Zones. In the case of road reserves, the occupier is the Local Authority or Main Roads Department. The responsible party must remove all tree loppings from road reserves.

Rural Areas

All fast growing self sown species in the "Clearance Zone" will be cut at ground level and treated with an approved herbicide to stop regrowth.

A 6 metre vehicle access track will be kept clear of all vegetation.

All dead, dying or leaning trees threatening lines in the Inspection Zone and above the safety line will be removed.

It may be necessary in certain circumstances to negotiate the disposal of the debris with the occupier.

The State Energy Commission will arrange for this work.

WHAT YOU NEED TO KNOW ABOUT INSURANCE

A good insurance policy is a great comfort during the fire season. If you don't save your house in a fire, at least you can build another one - if your insurance cover is good enough.

Here's some tips about insurance: but keep in mind the Golden Rule:

READ YOUR POLICY CAREFULLY

Know exactly what you're covered for, **before** the fire. Afterwards, it may be too late.

Householders policies

Policies for the house and its contents come in two sorts:

replacement (or reinstatement) insurance - covers the full cost of repairs or replacement. If your house is destroyed, this type of insurance meets the full cost of building a new one up to the sum insured which you have selected, which may be much more than your previous house was worth after depreciation.

As the sum insured is higher than replacement insurance, it is more expensive than insuring on an indemnity basis, but it's probably a better bet. Otherwise you could be caught out with insufficient money to get another house.

Indemnity insurance

covers you for the value NOW - that is, after deductions for depreciation due to age of the house.

Points About Replacement Insurance

These points are worth keeping in mind:

- you will only get full replacement costs if the sum insured is adequate.
- if you choose not to replace the item after a loss, the cash settlement may be calculated on the depreciated value - not the replacement cost.

VALUING YOUR HOUSE

Replacement Insurance

The basis for calculating replacement policy premiums is the 'full value' of your home, which is what it would cost **today** to replace it. The 'full value' goes up every year - check with a local builder or valuer. Don't forget to include surveyors' and architects' fees, removal of debris, paths, fences, internal fittings and all structural improvements including below ground swimming pools and any other extras (e.g. air-conditioning). Remember that the land is not insurable - don't include it in your calculations.

A general guide to replacement costs for different types of buildings is available from:

The Master Builders Association of W.A.
35 Havelock Street
WEST PERTH WA 6005
Telephone: (09) 322 5133

Indemnity Insurance

With this type of policy, an amount representing depreciation and fair wear and tear with age is deducted from the present day replacement cost (or "full value", see previous section). Generally, timber houses deteriorate more rapidly than brick, so a higher rate of depreciation may apply.

Arriving at the value of the house can often be difficult, and is dependent on many factors, which can vary from one house to another. In most cases, the age of the dwelling is of prime importance to the calculation. Other things to be considered include the level of maintenance of the house and the price of the land.

Finding the depreciated value is therefore complicated. However, it is worth noting that any depreciation is normally based on the present value, rather than the amount you paid for the house.

One thing to keep in mind with indemnity insurance, is that the insurance company is only obliged to pay up to the depreciated value of your house as assessed (usually by an independent assessor). It makes no difference if your policy sum insured is a much higher figure.



HOUSES BURNT FOLLOWING ENTRY OF SPARKS THROUGH THE ROOFS IN THE HIGH WIND CONDITIONS ASSOCIATED WITH BUSHFIRE.

Don't be under-insured

You need to keep the value of your insurance policies up to date: which means you probably need to pay a higher premium each year. If your house is damaged, and your insurance cover is below 80 percent of full value, as required by the Insurance Contracts Act, then the insurance company may only meet part of your costs. The formula used is this:

$$\frac{\text{Sum insured}}{\text{80\% of Full value}} \times \text{Amount of loss} = \text{sum paid by insurer.}$$

For example, if your house is insured for \$30,000 but has a full value of \$50,000, and if it receives \$10,000 damage in a fire, the payout would be:

$$\frac{\$30,000}{\$40,000} \times \$10,000 = \$7,500$$

However, if the house was completely destroyed, the full amount insured would usually be paid out.

The payout

REMEMBER - it is up to the insurance company to decide whether it will reinstate, repair, replace or provide a cash settlement for loss or damage to a house. You cannot **CHOOSE** to take the cash. Normally, under a replacement policy, the insurance company authorises replacement and pays the builder. You can rebuild in any style you like, **SO LONG AS** it does not increase the cost of the claim. If you want to build a more expensive house, you should talk to the insurance company first, to make sure they will still pay the full amount for which you were entitled.

AND ANOTHER TRAP

- some insurance companies may not allow you to build on another site.

CHECK WITH YOUR COMPANY

Be in it to win it

A normal householders policy assumes you live in the house all year round. If the house is to be left empty for more than 60 days, or if it is a holiday home, you need to tell the insurance company. Otherwise, the policy may not provide cover in those circumstances.

What's not covered

A normal householders house and/or contents policy **DOES NOT COVER:**

- livestock
- vehicles
- trailers
- caravans (unless fixed)
- boats
- business tools kept at home
- your garden or your plants

Farm Insurance

Farm buildings are usually covered under a fire and perils policy. This can cover farm buildings, machinery, harvested crops and livestock. The homestead itself can be covered by a householders policy.

Gardens

At present, no insurance cover is available for gardens.

Contents Policies

It's probably best to have your "house" and "contents" policies with the same firm. You are unlikely to get full replacement value for rapidly depreciating items like linen, carpets and clothes, even with a replacement policy.



CONTROLLING SPARK ENTRY POINTS IS A CRITICAL FACTOR, REGARDLESS OF WALL MATERIAL CHOICE.

Want to know more?

Contact:

The Insurance Council of Australia,
248 St George's Terrace, Perth 6000
Telephone (09) 322 6044

If you're concerned about your insurance policies, don't hesitate to ring up your insurance company.

AFTER THE FIRE - IT MAY BE TOO LATE.

EQUIPMENT

All set to fight the fire!

Some of the equipment you'll need for fire fighting will probably be on hand already. Other items may need to be bought, but are not generally expensive, except for the water pump.

Here's what you need:

Torch

Make sure it works and that you've got spare batteries.

Hoses

One hose for each water outlet. You'll need enough hose to reach all corners of the house.

Knapsack spray

For small spot fire.

Buckets

Have plenty around the house – plus one in the roof.

Ladder

Ideally you'll need two – one inside and one outside, long enough to reach the roof.

Fuel powered water pump

Emergency stand-by. Keep it in working order.

Gloves

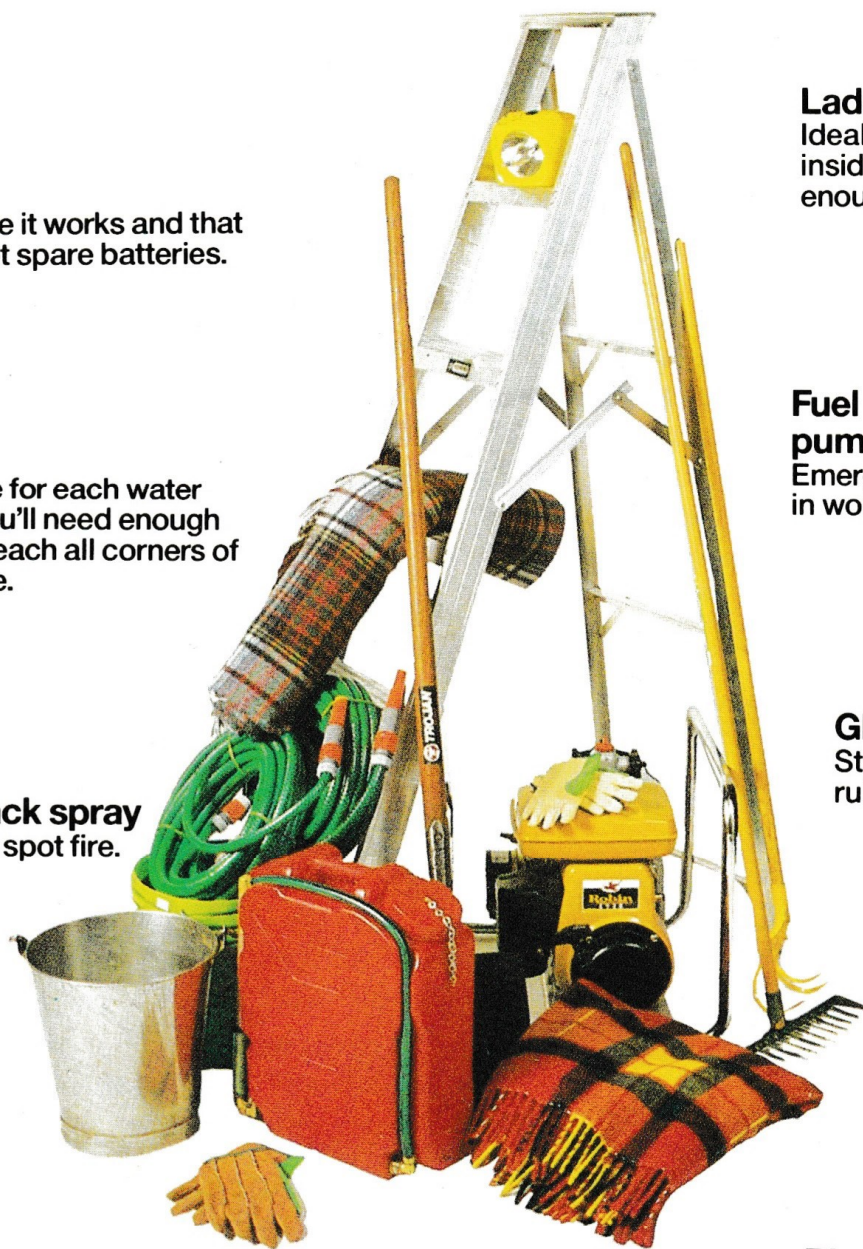
Sturdy garden variety not rubber or synthetic.

Shovels, hoes and rakes

At least one of each.

Blankets and towels

When wet, for blocking sparks under doors, and for heat protection.



EVACUATION

Stay or go?

When bushfires are close, and you feel sure they'll reach your house, you must decide **EARLY** whether to stay with the house, or evacuate your family.

If you stay, you may have a good chance of saving your home. Recent research by the University of Melbourne's Forestry Section into the Ash Wednesday fires in Mount Macedon suggest that this could be the case. Of those who stayed, 90% were able to save their houses, mainly because they were able to put out the spot fires as they started.

Staying with the house could also be safer than trying to get away on roads blocked by fires.

DON'T LEAVE THE DECISION TO EVACUATE UNTIL THE FIRES ARE SO CLOSE YOU CAN'T GET OUT ANYWAY.

You may prefer to STAY

- If you are confident your home is well prepared for fire.
- If you have sufficient emergency water supplies.
- If you think you and your family could deal with the stress and tension of battling the fire.

You may prefer to GO

- If you are not confident about the fire safety of your house.
- If you are worried about young children, elderly people or someone who's sick.
- If you suspect you could not cope with the stress of fighting the fire.
- If you know it is safe to leave and you have a firm destination.

If you decide to evacuate, go early and make sure you know where you're heading for (the local sports oval? the beach? the nearest town?).

Evacuation Arrangements

In Western Australia the Fire Authority, in consultation with the Police, will decide whether there is a need to evacuate communities in a major fire. If so, the Police will organise the evacuation.

CARS AND BUSHFIRES

Once you've decided to evacuate,

- Dress in protective clothing (long trousers and shirts, strong shoes).
- Put woollen blankets (wet if possible) and drinking water in the car.
- Take your pets with you.
- In the fire region, keep all the windows wound up, and don't get out of the car.



Driving

Drive carefully and slowly, as your car will not perform well in the heat.

Smoke will be thick in places, making it difficult to see; and there will be fire tankers and other cars on the road. So drive with your headlights on.

If you are forced to stop

If you get caught in the fire zone, try not to panic.

- Choose a place to stop with the least amount of vegetation. Burnt country is safer than unburnt country. Lightly forested areas are safer than long grass or low scrub. If possible, avoid a spot densely surrounded by trees.
- Keep headlights and hazard lights on and close all windows.
- Turn off fans and air-conditioning to keep smoke out.
- **Do not get out of the car or open the windows.**
- Get down below windscreen level, and cover yourself with a woollen blanket.
- It will get very hot inside the car, but if you are under a blanket you will be protected from radiant heat until the fire front has passed.

Running Through the Fire Front

If you have to run through the fire front to safety.

- Cover all exposed skin as best you can.
- Take some quick deep breaths, and move fast.
- Choose the easiest path - avoid dense growth, logs or uneven ground.

CAUTION: DO NOT ATTEMPT TO RUN THROUGH A FIRE FRONT UNLESS YOU CAN SEE THROUGH TO THE OTHER SIDE AND THE FLAMES ARE NO HIGHER THAN YOU.

IF YOU DECIDE TO STAY

Your house is your best protection in a bushfire. If you decide to stay rather than evacuate, dress everyone in protective clothes (long trousers, long sleeves, strong shoes). Bring young children and pets inside: older children can be very useful as fire-spotters and in fighting small spot fires around the house. Park the car in a cleared area as a potential second refuge, and leave the keys in the ignition. Put blankets or towels (wet if possible) inside the car, together with a bottle of water.

Protecting the House

- Close all door, windows and shutters.
- Bring outdoor furniture inside.
- Remove highly flammable curtains and furniture from window areas. (Close millim lined or woollen curtains).
- Keep sprinklers playing on high-risk parts of the house - windows, eaves, gas bottles.
- Fill basins, sinks and baths with water. Fill outside gutters, if time permits - block up the mouth of the downpipe, to keep the water in.
- Soak towels and rugs in water and lay along the doorways to keep sparks out. They can also be used as beaters for fire fighting.
- Soak blankets, and keep handy to protect you from radiant heat.
- Keep checking for spot fires around the house, and put them out.
- As the fire approaches move people into the fire refuge area, if you have one. Take hoses inside, to prevent them melting. Leave sprinklers running if installed.

STAY IN THE HOUSE WHEN THE FIRE FRONT IS PASSING. THIS USUALLY TAKES 5 TO 10 MINUTES. THEN KEEP CHECKING FOR SPOT FIRES - THEY CAN STILL OCCUR SEVERAL HOURS AFTER THE MAIN FIRE.



Fighting the Fire

AVOID THE FIRE FRONT

Fight the fire from the side if possible.

ATTACK THE BASE

It will do no good to hose the flames above the base of the fire.

HOSE WITH A SWEEPING ACTION

This is the best way to cover the entire burning surface.

HOSE THE FIRE NEAREST YOU

Concentrate on the fire edge first, then go on to the fire further away.

DAMPEN THE GRASS

Hose the ground in front of the fire to slow and cool it.

SHOVEL EARTH

Earth is a good way to put out small spot fires and embers. Shovel it on the flames.

USE BEATERS

A wet hessian bag or blanket can be used as a beater on low grass fires.

MAKE A FIREBREAK

Use shovels and hoes to create a firebreak in front of the fire. Make sure that you throw the debris back onto the fire.

DRINK FREQUENTLY

Drink every 15 minutes even if you don't feel thirsty. Heat exhaustion can strike suddenly.

CAUTION: DO NOT ATTEMPT TO RUN THROUGH A FIRE UNLESS YOU CAN SEE THROUGH TO THE OTHER SIDE, AND THE FLAMES ARE NO HIGHER THAN YOU.

After the fire

- Once the fire-front has passed, remain dressed in protective clothing and check the house thoroughly both inside and out for spot fires.
- Check for embers or signs of smoke - inside the ceiling, furniture, bedding, and crevices in windows and walls.
- Check under the floor if possible.
- Hose trees and shrubs near the house.
- Check garage and sheds for small fires.
- **REMEMBER:** Houses can burn long after the fire front has passed. Keep checking.

TAKE SPECIAL CARE:

The restricted and Prohibited burning times

Because Western Australia is so fire prone, each summer there are restrictions on the lighting of fires in the open air. These normally operate from October to April in the South of the State but vary in the North-West to correspond with the "Dry" during the Northern Winter.

During these "fire danger periods" when restrictions or prohibitions are in force.

YOU MUST NOT:-

- Throw or drop any burning tobacco, cigarette, cigar or match on the ground or from a vehicle.
- Light a campfire or cooking fire within 3 metres of a log or stump or unless there is a cleared area of at least 3 metres around the fire. Such fires are automatically prohibited on days when the fire danger forecast for the particular area is "Very High" or "Extreme".
- Leave the fire unattended. Always extinguish the fire with water or earth before leaving.
- Light a fire to burn bush, grass, stubble or undergrowth without a written permit.
- Use welding apparatus of any kind or power operated cutting discs of any kind unless there is at least one fire extinguisher situated at the site and any instruction issued by a Fire Control Officer is complied with.

BURNING GARDEN REFUSE OR RUBBISH

- Fires may be lit at any time in an incinerator which is properly constructed to prevent the escape of sparks or burning material.

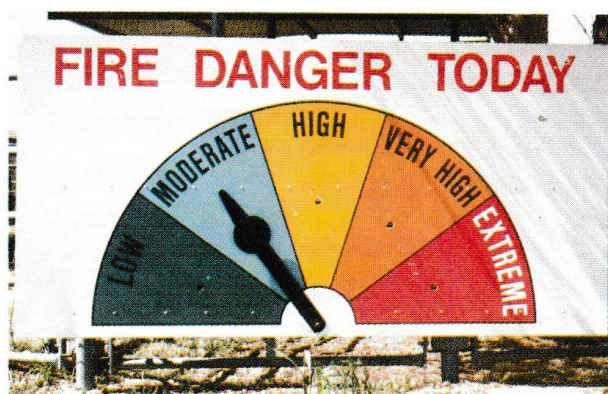
The areas around the incinerator must be cleared of all combustible material for a distance of at least 2 metres. The incinerator must not be situated closer than 2 metres from any building or fence.

- Fires may be lit on the ground for the purpose of destroying garden refuse or rubbish provided that an area of at least 5 metres radius around the fire has been cleared of all inflammable material. The fire is only to be lit between the hours of 6.00 pm and 11.00 pm of the same day. A person shall remain in attendance at the fire and completely extinguish the fire before he leaves it. No fires may be lit on days when the fire danger forecast for the area is "Very High" or "Extreme".

TOTAL FIRE BANS

On days when the Minister declares a "Bush Fire Emergency Period" for a defined area of the State, a person shall not light a fire in the open under any circumstances whatsoever in that area.

THIS BAN INCLUDES FIRES FOR WHICH A PERMIT HAS ALREADY BEEN ISSUED, CAMPFIRE, COOKING FIRES, BARBECUE FIRES, INCINERATORS AND RUBBISH FIRES.





FIRE SAFETY

Do it now!

Don't leave it until summer to try to make your property safe from fire. Lots of jobs need to be done at cooler times of the year. Here's a checklist of things to do. Details about most of them are given elsewhere in this book. (Tick the ones you've done).

Long-term precautions

Prepare firebreaks

Plant windbreaks, or belts of trees along the fence line

Make the house safe - fit wire screens and shutters, fill gaps

Provide an emergency water supply

Discuss fire prevention with your neighbours - is your locality safe?

Autumn and Winter (May - August)

Tree pruning - remove lower branches, check that power lines are clear

Reduce fuel levels around the house - clear long grass, leaves and twigs, flammable shrubs

Petrol and other fuels - store in shed away from house

Make sure your fire fighting equipment is in good order. Overhaul the emergency water pump

Make sure everyone in the family knows what to do in a fire

Spring (September - November)

Move woodpile and stacked timber away from the house

Keep the grass short - on farms, keep grazing pressure high on areas near the house

Clean out gutters, remove debris from roof

Cultivate firebreaks

Early Summer (December onwards)

Water lawns, trees and shrubs near house, to keep them green

Recheck fire-fighting gear, screens, water supplies, gutters

WESTERN AUSTRALIAN BUSHFIRE CONTROL ORGANISATION

Fire Protection in rural, semi-rural, many townsite and suburban areas of Western Australia is provided by volunteer bush fire brigades which are administered by Local Government and financed mainly from their own resources. Land management authorities such as the Department of Conservation and Land Management place increasing reliance on these brigades.

Support for brigades from the State Government is through the activities of the Bush Fires Board which provides services to Local Government and volunteers.

Local Government

Is an integral and essential part of the Bush Fires Organisation and is responsible for:

Routine administration of the Bush Fires Act.

Prosecution of offences against this Act.

Publishing a Firebreak Notice and ensuring compliance with requirements of the notice.

Bush Fire Control Officers

Are appointed by the Local Council and their day to day activities deal largely with fire

prevention, the issue of permits to burn and generally to provide for the fire safety of the area in which they live.

Fire Control Officers may:-

Take such measures as may appear necessary to prevent the outbreak of bush fires.

Protect life and property from damage by bush fires.

Control and extinguish fires.

Examine fires they feel may have been lit contrary to the provisions of the

Act, or any fires they believe to be out of control.

Examine firebreaks, fire hazards or any fire precautions on the land.

Investigate the cause and origin of fire on the land or in a building.

Prosecute offenders in a court of law, if authorised by Council to do so.

Note: Some of these powers are also vested in the police.

The Bush Fire Brigade

Is the grass roots of the rural fire control organisation. Volunteer firefighters are organized into brigades registered by Local Councils.



BASIC FIRST AID

The main points to remember are

- Keep a well stocked first-aid kit in your 'fire-refuge' (such as your laundry) at all times
- Have a basic first-aid reference book on hand
- Don't panic. It could be some time before rescue teams can reach you. Do what you can for any injured, and be patient.

First-aids kits

If you don't already have one, your local chemist can help you put one together. Alternatively, the Australian Red Cross provide a family kit or a different kit is available from the St John Ambulance Association.

Reference books

There are many different books available. A couple worth considering are the Red Cross book 'First Aid Manual', which costs \$12.95, and 'Australian First Aid', available from the St John Ambulance Association for \$9.80.

Organisations

If you'd like more help, contact the following:

The St John Ambulance Association,
298 Wellington Street
PERTH 6000
Telephone: (09) 325 4088

OR

The Red Cross Society
357 Murray Street
PERTH 6000
Telephone: (09) 321 0321

Treatment of the most common injuries

Burns

If clothes are on fire, wrap the person in a rug or blanket to put out the flames. Keep the person still. Rinse (or cover) the burns with cool water for a few minutes. Be careful not to overdo it - if you don't want the person to start shivering. DO NOT remove burnt clothing, break blisters, touch the burns unnecessarily or clean them. Loosely cover with a sterile dressing or clean linen. Treat for shock.

Shock

SYMPTOMS: pale face, cold/clammy skin, weak, rapid pulse. Could be unconscious. Move to fresh air if possible. Lie the person down, raise the feet and keep him warm. No food or drink. If unconscious, lie him on his side and make sure airway is clear. It may be necessary to pull the tongue forward and remove dentures.

Overcome by smoke (asphyxiation) and smoke inhalation

Move person away from the smoke or ask him to lie down on the ground or floor, where the air is freshest. Apply artificial respiration if breathing has stopped.

Smoke and foreign matter in eyes

Bathe the eyes in a weak saline solution (about 1 teaspoon of salt in half a litre of water).

Heat exhaustion

SYMPTOMS: pale face, cold/clammy skin, weak pulse, shallow breathing.

Place the person in the coolest spot, sponge with cool water, give them plenty to drink, preferably with a teaspoon of salt in each litre of water.

YOU'RE IN CONTROL - Make Your Home a Fire Refuge

On your property, fire safety starts with you. You're in control. It's in your hands to get rid of fire risks around the home, and build up a garden that will protect you in a fire. This book sets out some useful hints on what to do.

But fire prevention is a family business. There's a job for even the youngest child - raking up the dead leaves, perhaps, or watering the lawn near the house, to keep it green and safe. For older children, there's a lot to learn about fire safety - about the role of trees in a fire; about safety features like windbreaks; and about the likely pattern of fires in the area.

On your property, you're in control. In this bushfire-prone country of ours, you and your family can work together to make your home a fire refuge.



EMERGENCY Telephone Numbers

Keep this list handy, and fill in your local numbers NOW

Emergency calls
(Fire, Ambulance, Police)
DIAL 000

Local Fire Brigade

.....

Local Government Authority

.....

If you notice a fire hazard in your area, ring the local Council and give the details.

EMERGENCY

When fires are approaching, remember these rules

- The house is your best protection.
- Dress everyone in protective clothing - long trousers, long sleeve shirts, sturdy footwear.
- If you decide to evacuate, go early. Keep car windows wound up, and don't leave the car.
- If you stay, keep checking for spot fires. Remember the house can catch fire several hours after the fire front has passed.
- Radiant heat is the killer - keep wet blankets nearby and shelter under them as the fire passes.
- Avoid heat exhaustion - take a drink of water every 15 minutes.

